County Borough of Bolton.

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

AND

SCHOOL MEDICAL OFFICER

FOR

1913.

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V.

Extracts from Memorandum of Local Government Board as to the Annual Reports of the Medical Officer of Health.

"The Report should be chiefly concerned with the conditions affecting health in the district, and with the means for improving those conditions. It should contain an account, brought up to the end of the year under review, of the sanitary circumstances of the district, and of any improvement or deterioration which may have occurred during the year in these circumstances. Care should be taken to report fully and explicitly on the influences affecting or threatening to affect injuriously the public health in the district, and on the action which has been taken, or which may still be needed, with a view to combat those influences. It is of especial importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous annual reports, or in special reports presented during the year under review, and that attention should be called afresh year by year to such as remain unremedied."

The subjects to be specially borne in mind are:—

(1) Physical features of the district.
(2) Housing.
(3) Population, occupations and influence on health.
(4) Water supply, sufficiency, wholesomeness and freedom from risk of pollution.
(5) Sewerage and drainage.
(6) Excrement and refuse disposal, system in vogue, defects if any.
(7) Sanitary inspection and administration of the district.
(8) Premises and occupations over which the Council have supervision.
(9) Prevalence of and control over acute infectious diseases.
(10) Prevalence of and control over Tuberculosis.
(11) Investigation of other diseases.
(12) Infant Mortality.
(13) Vital Statistics.
(14) Schools and their sanitary condition and action taken in regard to the health of the scholars.
(15) Medical inspection of school children as part of the duties of School Medical Officer.

PUBLIC HEALTH OFFICE,
BOLTON.

6th February, 1914.

GENTLEMEN,

I have the honour to submit to you the Report for 1913, on the health and sanitary circumstances of the Borough of Bolton.

It contains the usual statistical information, together with extracts from the census of 1911. I wish, especially, to call your attention to the following matters—the most prominent at the present time in preventive medicine :—

1. Tuberculosis.
2. Infant care and child welfare.
3. Treatment of school children.
4. Food adulteration.

I have much pleasure in acknowledging the assistance of all members of the Public Health and Medical Inspection Staff, and, especially Dr. Moffatt, Mr. Hurst, and Mr. Bridge; who are responsible for parts of the Report, and to Mr. Daniels, the Chief Clerk, for the preparation of the statistical tables.

I am pleased to acknowledge the encouragement and stimulus given to the work of this department by the Chairman, Vice-Chairman, and members of the Sanitary Committee, whose unfailing interest and courtesy have helped us over many difficulties.

I am,

Yours obediently,

JOHN E. GOULD,

Medical Officer of Health,
School Medical Officer.

COUNTY BOROUGH OF BOLTON.

SANITARY COMMITTEE.

The Mayor—Ald. J. T. Brooks, J.P.
Chairman—Ald. E. Aspinall, J.P.
Vice-Chairman—Coun. W. Hargraves, J.P.

Ald. Knowles Edge, J.P.
,, J. Young, L.R.C.P., J.P.
Coun. C. Ainsworth, J.P.
,, G. E. Blackburn.
,, J. Boardman.
,, H. Bommer.
,, J. Eckersley.
,, T. H. Haythornthwaite.
,, A. E. Holt.
Coun. G. S. Ikin.
,, P. Knott.
,, A. Leake.
,, W. R. Lythgoe, J.P
,, W. Marshall.
,, E. Monks, M.B.
,, F. Steel.
,, R. Tootill, J.P.
,, G. Unsworth.

PUBLIC HEALTH & MEDICAL INSPECTION STAFF.

Public Analyst and Bacteriologist
Harry Hurst, B.Sc. Lond and Sheff., F.I.C.

Veterinary and Chief Meat Inspector—W. H. Bridge, M.R.C.V.S.

District Inspectors—1. George Southern.
2. Edward Oakes, Cert. R. San. I.
3. Evan Sumner, M. R. San. I.
4. Thomas Robinson, Cert. R. San. I. and Cert. for Food.
5. Thomas Ormrod, Cert. R. San. I.
6. Fred S. Roscoe, Cert. R. San. I.

Chief Clerk & Inspector of Nuisances—
Herbert Daniels, Cert. R. San. I.

Chief Disinfector— John Wilson.

Health Visitors— 1. Miss S. A. Ramsden, C.M.B., Cert. R. San. I.
2. Miss A. I. Murphy, 3 years' Cert.
3. Miss B. Fyles, Cert. R. San. I.

School Nurses— 1. Miss G. M. Hughes, 3 years' Cert.
2. Miss G. A. Jones, 3 years' Cert., C.M.B.

Matron Borough Fever Hospital—Miss Eliz. Bateman.

Assistant Medical Officer of Health and Assistant School Medical Officer—
C. W. Paget Moffatt, M.A. Lond., M.B., B.C., D.P.H., Cantab.

Medical Officer of Health and School Medical Officer—
John E. Gould, M.D. Lond., D.P.H. Cantab.

SECTION I.

Vital and Mortal Statistics.

SUMMARY OF VITAL AND MORTAL STATISTICS 1913.

Position	Lat. 53° 35 N., Lon. 2° 37 W
Elevation above sea level	230ft. to 1450ft.
Geological Formation :	Boulder Clay and Sand over Coal Measures.
Area in Acres	15283
Population	183879
Density	12·0
New Houses Certified, 1913	294
Estimated No. of houses in the Borough (31st March, 1913)	42860
No. of houses where gross rental does not exceed £26 per annum.	40641
No. of new houses erected from Dec., 1909, to 31st March, 1913, where the gross rental does not exceed £26 per annum	1678
Rateable Value at 31st December, 1913	£858508
Births	3999
Birth-rate	21·7
Deaths	2895
Death-rate (corrected for Institutions)	15·7
Corrected Death-rate (ascertained by application of Registrar-General's Factor 1·0876)	17·0
Average Death-rate (1903-12)	16·0
Infantile Mortality	142
Epidemic Death-rate (Seven Chief Diseases)	1·83
Diarrhœa Death-rate	·81
Diarrhœa and Enteritis (under 2 years), Death rate per 1000 Births	42·76
Phthisis Death-rate	·83
Other forms of Tuberculosis, Death-rate	·31
Respiratory Death-rate	3·79
Rainfall (26 years' average 41·877)	39·46
96 Great Towns Birth-rate	25·1
96 Great Towns Death-rate	14·3
96 Great Towns Infantile Mortality	117
96 Great Towns Diarrhœa and Enteritis (under 2 years), Death-rate per 1000 Births	29·33
England and Wales Birth-rate	23·9
England and Wales Death-rate	13·7
England and Wales Infantile Mortality	109
England and Wales Diarrhœa and Enteritis (under 2 years), Death-rate per 1000 Births	23·41

Population and Area.

For the middle of 1913 the estimated population was 183,879, and this on an area of 15,283 acres, or 23·8 square miles, gives a density of 12·0 persons per acre.

Births.

3,999 births were registered, equal to a birth-rate of 21·7, the lowest recorded since 1874. The illegitimate births numbered 157, and were 3·9 per cent of the total births.

Deaths.

2,895 deaths were registered of Bolton residents. This included 370 "transferable deaths," *i.e.*, persons whose usual or fixed residence was in Bolton, but who died in some institution or residence outside Bolton. On the other hand it excluded 39 non-residents who died in Bolton. The death-rate was 15·7.

The average death-rate in Bolton for the 10 years 1903-1912 was 16·0.

There were 265 deaths in the Poor Law Infirmary, 135 in the Bolton Infirmary, 58 in Lunatic Asylums, 12 in the Borough Hospitals, and 47 in other places outside the Borough. 32 of those who died in the Bolton Infirmary were non-residents.

The death-rates varied from 10·3 in Heaton, to 20·0 in Exchange Ward.

TABLE I.

POPULATIONS, BIRTH-RATES, &c., IN WARDS, 1913.

WARD.	Population.	Area.	Density.	Birth-rate.	Death-rate.	Infantile Mortality.		Zymotic Death-rate.
						1913	Av. 1908-12	
West	26378	450	58·6	22·2	14·9	115	132	1·32
Halliwell	22362	358	62·4	20·4	14·5	115	110	·93
Bradford	19710	285	69·1	23·3	19·3	193	155	3·50
Derby	19071	300	63·5	23·4	19·6	190	152	2·83
East	9666	160	60·4	26·7	18·8	169	175	1·96
Rumworth	9311	163	57·1	26·8	16·8	168	134	4·94
Church	8319	390	21·3	16·1	14·1	119	127	1·08
North	7431	150	49·5	23·1	13·5	162	111	1·07
Exchange	4335	105	41·2	23·2	20·0	207	147	1·84
Old Borough	126583	2361	53·6	22·6	16·7	155	138	2·12
Great Lever	12980	867	14·9	17·4	13·1	141	119	2·00
Tonge	10035	830	12·0	23·4	16·9	127	112	·99
Astley Bridge	8428	1780	4·7	17·3	13·0	89	83	·83
Smithills...	7622	2108	3·6	20·0	10·6	84	93	·52
Hulton	6628	1620	4·0	24·8	14·1	96	91	1·65
Deane-cum-Lostock	4395	2601	1·6	15·0	12·5	121	115	1·59
Darcy Lever-cum-Breightmet	4204	1372	3·0	22·3	14·7	95	116	—
Heaton ... .:.	3004	1744	1·7	15·3	10·3	43	42	·99
Added Area	57296	12922	4·4	19·7	13·5	108	102	1·18
Extended Borough ...	183879	15283	12·0	21·7	15·7	142	129	1·83

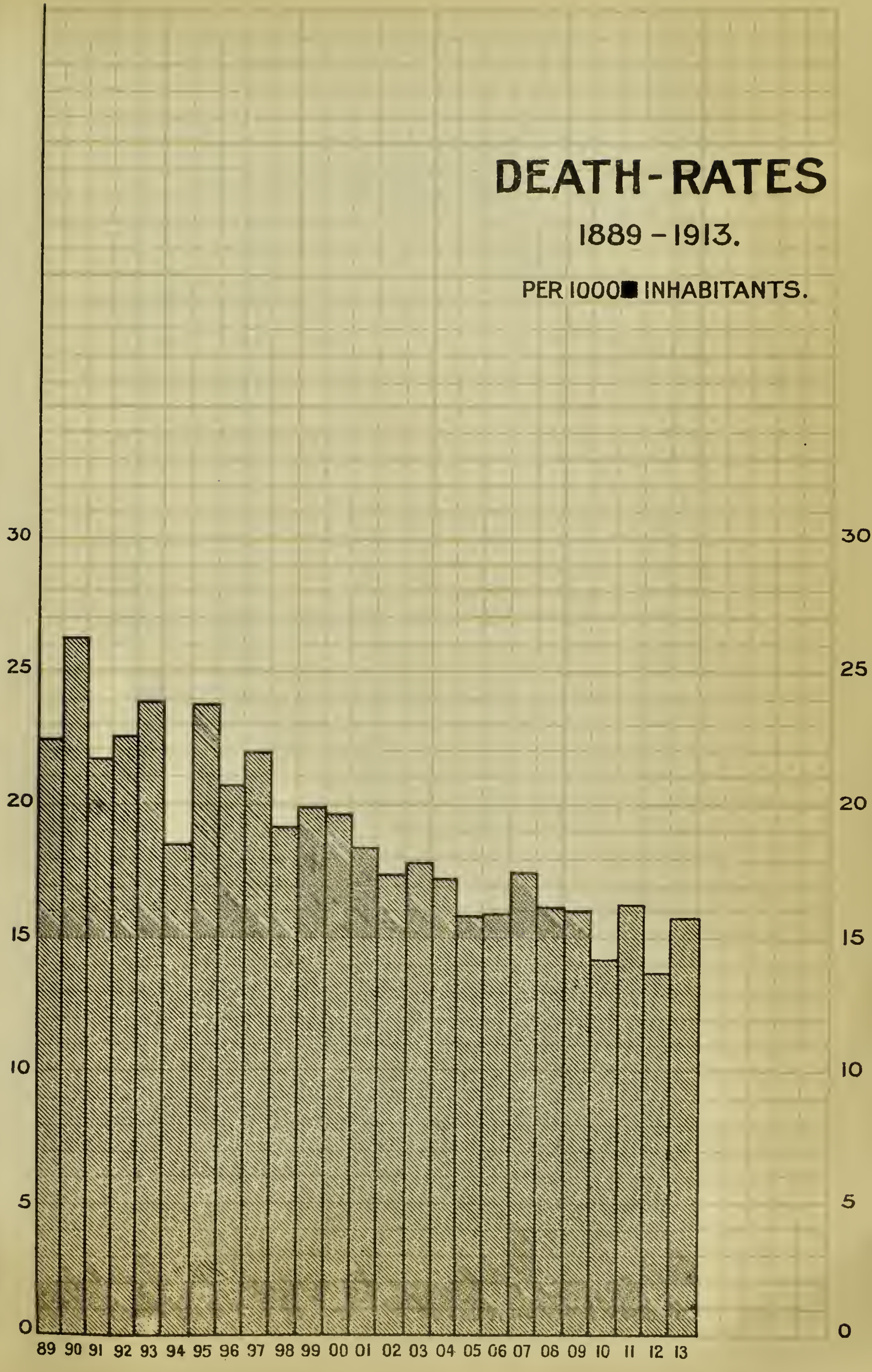
DEATH-RATES IN CHIEF LANCASHIRE TOWNS.

1913.

(Compiled from the Quarterly Returns of the Registrar General).

96 Great Towns	14·3
London	14·1

Rochdale	14·9
Bury	15·1
Warrington	15·3
Manchester	15·5
Blackburn	15·5
BOLTON	**15·7**
Salford...	15·7
Burnley	16·4
Oldham	16·8
Preston	17·0
Bootle	17·1
Liverpool	17·9
Wigan	18·3
St. Helens	18·9



DEATH-RATES

1889 - 1913.

PER 1000 INHABITANTS.

TABLE II.

POPULATIONS, DENSITIES, BIRTH-RATES, DEATH-RATES AND INFANTILE MORTALITY IN PREVIOUS YEARS.

Year.	Population	Density	Births	Birth-rate.	Deaths.	Death-rate	Infantile Mortality.
1773	5600	3·0					
1791-1800	14437	7·8					
1801-1810	20444	11·1					
1811-1820	27364	14·8					
1821-1830	37240	20·2					
*1831-1840	46579	25·3					
1841-1850	**55167**	**29·9**					
1851-1860	**61645**	**33·5**				**30·7**	
1866	76206					29·2	
1867	77468					29·0	
1868	78704					25·0	
1869	79960					26·6	
1870	81400					27·4	
1861-1870	**75999**	**41·2**				**29·4**	
1871	83095	45·1				26·1	
1872	84072	45 6				28·0	
1873	85061	46·2				23·3	
1874	86061	46·7	3526	40·9	2219	25·7	178
1875	87073	47·3	3552	40·7	2403	27·5	193
1876	88097	47·8	3722	42·2	2199	24·9	169
1877	89133	48·4	3596	40·3	2226	24·9	169
†1878	102919	43·5	3952	38·3	2313	22·4	181
1879	103819	43·9	3897	37·5	2233	21·5	158
1880	104727	44·3	4644	44·3	2835	27·0	179
1871-1880	**91405**	**45·8**	**3841**	**40·6**	**2346**	**24·8**	**175**
1881	105643	44·7	3811	36·0	2022	19·1	151
1882	106567	45·1	3834	35·9	2277	21·3	170
1883	107499	45·5	3697	34·3	2157	20·0	171
1884	108439	45·9	3701	34·1	2615	24·1	194
1885	109387	46·3	3788	34·6	2282	20·8	161
1881-1885	**107507**	**45·5**	**3766**	**34·9**	**2270**	**21·0**	**169**
1886	110343	46·7	3786	34·3	2572	23·3	184
1887	111308	47·1	3627	32·5	2393	21·4	172
1888	112281	47·5	3729	33·2	2453	21·8	170
1889	113263	47·9	3759	33·1	2528	22·3	166
1890	114253	48·3	3726	32·5	2986	26·1	176
1886-1890	**112289**	**47·5**	**3725**	**33·1**	**2586**	**22·9**	**173**
1891	115253	48·8	3914	33·9	2516	21·6	165
1892	116261	49·2	3769	32·4	2648	22·6	185
1893	117278	49·6	3874	33·0	2813	23·8	200
1894	118309	50·1	3719	31·4	2215	18·5	162
1895	119337	50·5	3960	33·1	2862	23·7	213
1891-1895	**117286**	**49·6**	**3847**	**32·7**	**2610**	**22·2**	**185**
1896	120380	50·9	3792	31·7	2496	20·7	165
1897	121433	51·5	3985	32·8	2671	21·9	184
1898	122495	51·8	3800	31·0	2350	19·1	167
‡1899	162222	10·6	4878	30·0	3238	19·9	180
1900	164240	10·7	4775	29·0	3222	19·6	170
1896-1900	**138154**	**35·1**	**4246**	**30·9**	**2795**	**20·2**	**173**
1901	168531	11·0	4648	27·5	3085	18·3	172
1902	169798	11·1	4779	28·1	2959	17·4	132
1903	171065	11·1	4700	27·4	3062	17·8	151
1904	172332	11·2	4736	27·4	2994	17·3	167
1905	173599	11·3	4481	25·8	2754	15·8	166
1901-1905	**171065**	**11·1**	**4668**	**27·2**	**2968**	**17·3**	**157**
1906	174866	11·4	4599	26.3	2794	15·9	138
1907	176133	11·5	4476	25·4	3073	17·4	145
1908	177400	11·6	4573	25·7	2874	16·2	148
1909	178667	11·6	4750	26·5	2892	16·1	126
1910	179934	11·7	4380	24·3	2568	14·2	116
1906-1910	**177400**	**11·6**	**4555**	**25·6**	**2840**	**16·0**	**134**
1911	181202	11·8	4163	22·9	2962	16·3	160
1912	182534	11·9	4128	22·6	2505	13·7	96
1913	183879	12·0	3999	21·7	2895	15·7	142

* Incorporation in 1838 with 48000 population and 1840 acres.

† Added in 1878 part of Rumworth with 163 acres and 3000 population. and part of Halliwell with 358 acres and 10,000 population.

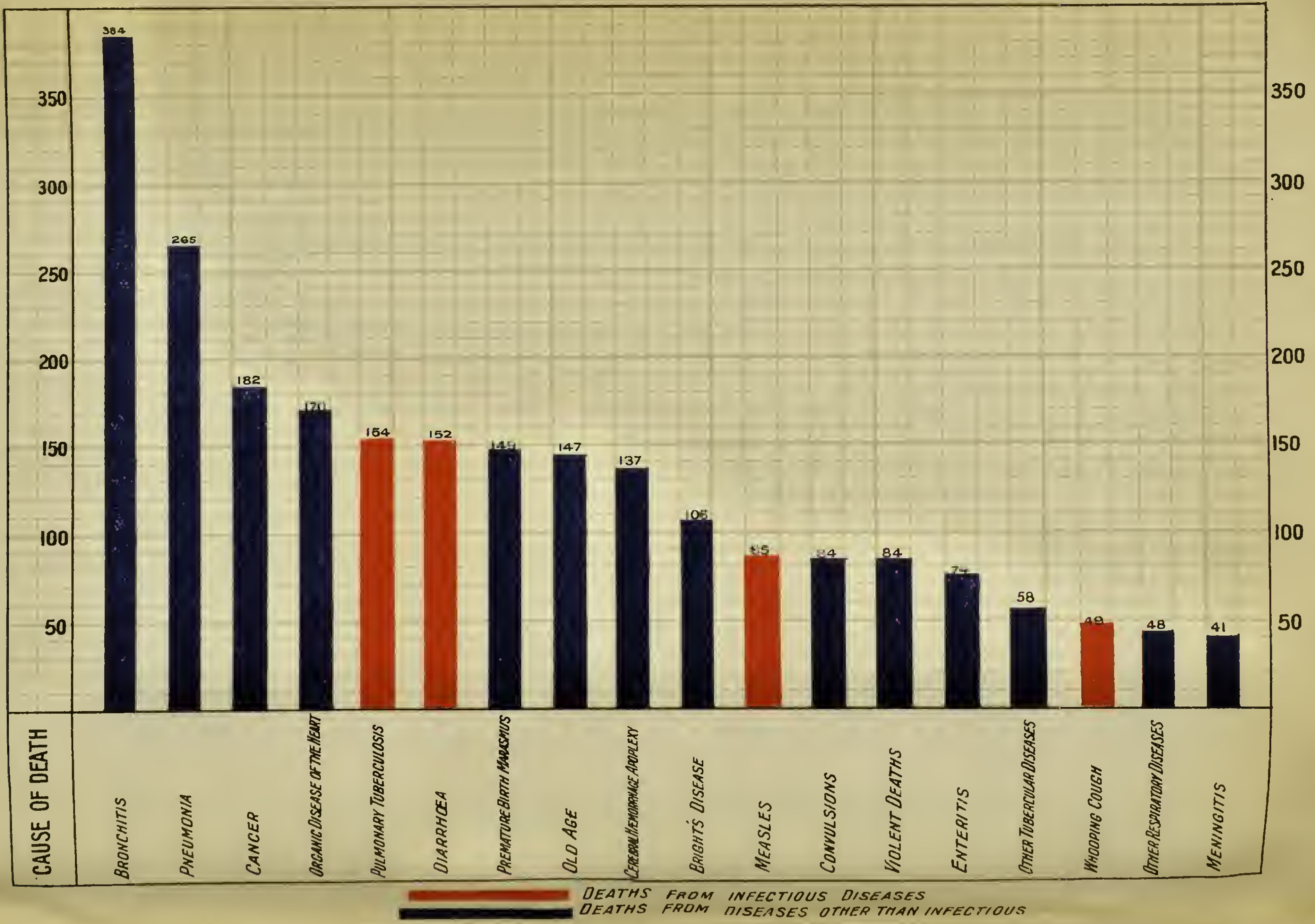
‡ Borough extended and 38000 added to the population.

SUMMARY OF THE PRINCIPAL CAUSES OF DEATH, 1913.

	No. of Deaths.	Per cent of Total Deaths.	Death-rate per 1000 of Pop.
GENERAL DISEASES.			
(1) Pulmonary Tuberculosis	154	5·3	·83
(2) Other Tubercular	58	2·0	·31
(3) Cancer	182	6·2	·98
NERVOUS SYSTEM.			
(1) Cerebral Hæmorrhage, Apoplexy	137	4·7	·74
(2) Infantile Convulsions	84	2·9	45
(3) Other Nervous	106	3·6	.57
CIRCULATORY SYSTEM.			
(1) Organic Disease of Heart	170	5·8	·92
RESPIRATORY SYSTEM.			
(1) Bronchitis	384	13·2	2·08
(2) Pneumonia	265	9·1	1·44
DIGESTIVE SYSTEM.			
(1) Diarrhœa & Enteritis	226	7·8	1·22
(2) Other Digestive	122	4·2	·66
GENITO-URINARY SYSTEM	133	4·5	·72
DISEASES OF EARLY INFANCY.			
(1) Premature Birth	75	2·5	·40
(2) Atrophy, Debility, &c.	84	2·9	·45
OLD AGE.	147	5·0	·79
VIOLENT CAUSES.	84	2·9	·45

COMPARATIVE VIEW OF THE PRINCIPAL CAUSES OF DEATH.

1913.



Infantile Mortality.

569 or 19 per cent. of the total deaths were those of children under one year of age, equal to an infantile mortality of 142 per 1000 births. The rates varied from 43 in Heaton to 207 in Exchange Ward.

INFANTILE MORTALITY IN WARDS.

WARD.	Births.	Deaths under 1 year.	Infantile Mortality.
West	588	68	115
Halliwell	457	53	115
Bradford	460	89	193
Derby	447	85	190
East	259	44	169
Rumworth	250	42	168
Church	134	16	119
North	172	28	162
Exchange	101	21	207
Great Lever	226	32	141
Tonge	235	30	127
Astley Bridge	146	13	89
Smithills	153	13	84
Hulton	165	16	96
Deane-cum-Lostock	66	8	121
Darcy Lever-cum-Breightmet	94	9	95
Heaton	46	2	43
Borough	3999	569	142

CHIEF CAUSES OF DEATH UNDER ONE YEAR OF AGE.

	1908	1909	1910	1911	1912	Av. 1908 to 1912	1913
Total Deaths	677	599	509	670	398	570	569
Diarrhœa and Enteritis	161	68	84	249	36	119	129
Respiratory	102	105	94	84	66	90	107
Premature Birth and Congenital Defects	111	121	98	85	99	103	86
Atrophy and Debility	87	101	71	102	59	84	74
Convulsions and Meningitis	68	76	47	47	57	59	70
Tuberculous Diseases	34	16	16	16	21	20	16
Epidemic Diseases (excluding Diarr.)	45	25	29	24	29	30	39
All other Causes	69	87	70	63	31	65	48

As is well known, Lancashire and its large towns compare unfavourably as to its infantile mortality with other counties of England and Wales, the highest rates obtaining in manufacturing and industrial centres and the lowest in agricultural. Thus in 1910 while England and Wales had an infantile mortality of 105, Hertfordshire was only 63, Lancashire 129, and Carmarthenshire 136.

The following is a short summary of the eighth column of Table 11 and shews the average quinquennial infant mortality in Bolton from 1876.

Quinquennium.		Average rate.
1876-1880	...	171
1881-1885	...	169
1886-1890	...	173
1891-1895	...	185
1896-1900	...	173
1901-1905	...	157
1906-1910	...	134
1911	...	160
1912	...	96
1913	...	142

A useful comparison, as being placed in somewhat similar circumstances is with other Lancashire towns in order of their population. The following is for the five years 1907-1911 from the Registrar General's Returns.

Town.	Average Infantile Mortality.	Average General Death-Rate.
Liverpool	145	19·4
Manchester	143	17·6
Salford	142	17·8
Bolton	**140**	**15·9**
Oldham	142	18·4
Blackburn	150	16·2
Preston	155	17·4
Burnley	178	17·4
St. Helens	142	17·2
Rochdale	127	16·3
Wigan	163	18·2
Bootle	134	17·1
Bury	137	15·9

In trying to determine the factors which produce a high infant mortality it is necessary to study the chief causes of death under one year of age over a series of years.

In the table given on page 9, this is done for the period 1908-1912 which includes several wet summers and two very dry ones. It will be seen that diarrhœa and enteritis even in average years account for 20 per cent of the deaths. It is known that a very large proportion of these deaths occur during the summer months—July, August and September. If these deaths could be eliminated, the infant mortality would be reduced to a figure which at the present time would be considered low and almost satisfactory. Premature births and congenital defects account for 18 per cent of the deaths and if added to atrophy and debility to which they are closely allied, no less than 33 per cent of the deaths. Finally respiratory deaths make 16 per cent of the total and these may be greatly increased in inclement seasons, and after epidemics such as measles or whooping cough.

Diarrhœa and enteritis attack children who are hand-fed much more readily than those who are breast-fed, and the attack-rate is higher where there are insanitary surroundings.

In an enquiry made in Bolton a few years ago it was found that in poorer districts where the income was under 20/- a week, the infantile mortality was four times that of children born in houses with an income above 20/- per week.

In point of importance however, immaturity stands first. This depends to a great extent upon the inability of the mothers from various reasons to care for the unborn child. Many mothers are compelled owing to poverty, to work long hours in impure air. The stress and strain reacts upon the child. After birth the child loses the mother's care owing to her early return to work.

It will be noticed also that 56 per cent of the deaths occur in the first three months, and no less than 25 per cent within the first month.

In order to prevent the prematurity and immaturity which is the chief cause of a high infantile mortality it is necessary to try and raise the standard of physical motherhood, as so much depends upon the health, intelligence and devotion of the mother particularly during the first year of life. To do this the mother requires to live in sanitary surroundings and good houses, to be able to obtain cheap, good food, have a good knowledge of domestic duties, and avoid the dangers arising from unhealthy occupations.

The poverty of many will prevent them from enjoying these favourable oonditions and all that can be done is to provide for them such assistance as will tend to ameliorate their circumstances. The insurance maternity benefit has been of great assistance to many, chiefly in providing for the doctor's or midwife's fee. More help is still need especially in the form of food and clothing; in some the destitution is so great that the best chance for the mother and child can only be obtained in a maternity home or lying-in institution.

There are already established in Bolton, Schools for Mothers, and a Kitchen for Cheap Dinners, both doing excellent work. A maternity home and dispensary would form an excellent centre for these activities where ladies of wealth and leisure could perform a noble work in helping their less fortunate sisters.

Details of the work being done in Bolton to combat ignorance and poverty of mothers is given in the section dealing with the work of the Health Visitors.

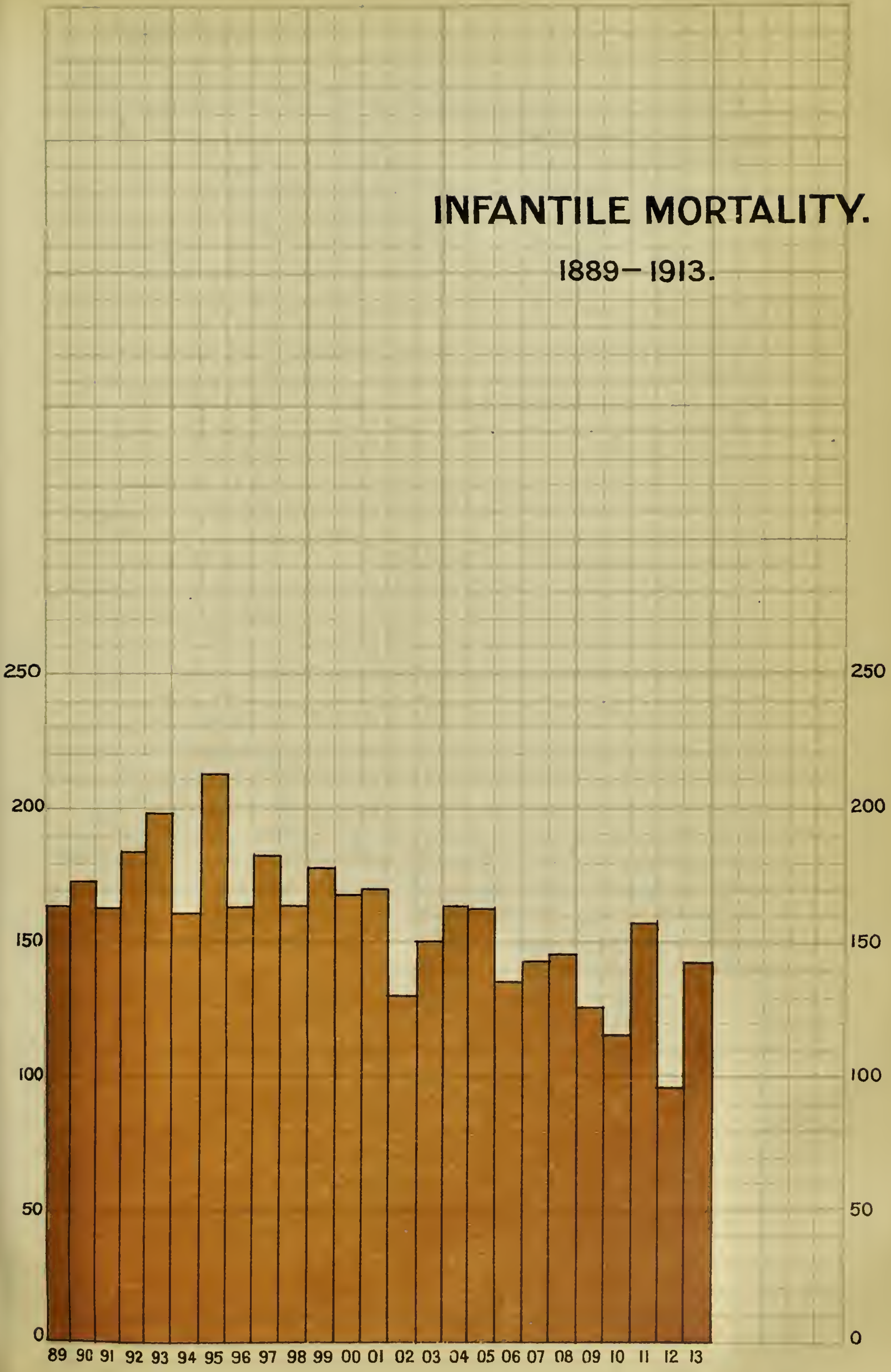
Mortality from Epidemic Diseases.

337 deaths were registered from the seven chief epidemic diseases including small pox, scarlet fever, diphtheria, enteric fever, diarrhœa, measles, and whooping cough. This is equal to a death-rate of 1·83 per 1000 of population.

CAUSES OF DEATH FROM EPIDEMIC DISEASES.

		1910	1911	1912	1913
Seven Chief Zymotics	Smallpox	—	—	—	—
	Scarlet Fever	37	12	11	3
	Diphtheria and Memb. Croup...	29	40	21	32
	Enteric and Continued Fever...	12	23	11	16
	Measles	2	61	35	85
	Whooping Cough	53	13	39	49
	Diarrhoea	63	279	18	152
	Influenza	16	7	27	25

In the following table the death-rates are given for previous years and also those for pulmonary tuberculosis.


INFANTILE MORTALITY.
1889–1913.
250
200
150
100
50
0
89
90
91
92
93
94
95
96
97
98
99
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13

TABLE III.

DEATH-RATES FROM THE SEVEN EPIDEMIC DISEASES, AND PULMONARY TUBERCULOSIS, 1866-1913.

Year.	Small-pox.	Scarlet Fever.	Diph-theria and Memb Croup	Fever.	Measles.	Whooping Cough.	Diarrhœa.	Seven Chief Epi-demic.	Pulmonary Tuber-culosis.
Av. 1866-1870	·06	1·40	·03	·68	·86	·55	1·88	5·7	—
Av. 1871-1880	·11	1·10	·02	·50	·68	·71	1·74	4·7	—
1886	—	·14	·06	·16	1·23	·67	1·39	4·4	1·69
1887	—	·32	·06	·31	·80	·24	1·29	3·06	1·61
1888	—	·45	·06	·33	·29	·50	·99	2·6	1·64
1889	—	·56	·25	·27	1·39	·55	·91	4·1	1·38
1890	—	·48	·12	·22	·83	·92	·94	3·53	1·61
Av. 1881-1890	·019	·27	·07	·21	·73	—	1·19	—	1·67
1891	—	·18	·08	·27	·47	·38	·81	2·22	1·56
1892	—	·25	·11	·17	·36	·92	1·10	2·95	1·32
1893	·05	·28	·06	·28	1·38	·66	1·67	4·42	1·46
1894	—	·08	·04	·21	·16	·51	·57	1·59	1·38
1895	—	·17	·12	·41	1·00	·56	1·74	4·03	1·56
1896	—	·32	·07	·41	·04	·83	·85	2·50	1·39
1897	—	·18	·03	·29	1·77	·32	1·63	4·16	1·53
1898	—	·16	·06	·28	·25	·36	1·80	2·93	1·78
1899	—	·22	·08	·33	·57	·27	1·59	3·08	1·49
1900	—	·12	·12	·29	·22	·50	1·13	2·40	1·74
Av. 1891-1900	·005	·19	·07	·28	·62	·53	1·28	3·02	1·52
1901	—	·30	·15	·23	·64	·29	1·43	3·05	1·69
1902	·04	·68	·27	·23	·18	·30	·41	2·14	1·49
1903	·01	·34	·22	·21	·28	·05	·88	2·01	1·27
1904	·005	·12	·16	·21	·09	·78	·90	2·29	1·28
1905	—	·02	·09	·19	·52	·04	1·04	1·92	1·20
1906	—	·09	·13	·22	·01	·11	1·18	1·77	1·15
1907	—	·17	·11	·14	1·32	·36	·37	2·49	1·05
1908	—	·11	·08	·20	·01	·46	·88	1·77	1·21
1909	—	·13	·11	·18	·22	·19	·28	1·14	1·20
1910	—	·20	·16	·06	.01	·29	·35	1·08	1·08
Av. 1901-1910	·005	·21	·14	.18	·32	·28	·77	1·96	1·26
1911	—	·12	·22	·12	·33	·07	1·53	2·41	1·03
1912	—	·06	·11	·06	·19	·21	·09	·73	·99
1913 ..	—	·01	·17	·08	·46	·26	·81	1·83	·83

TABLE IV.

METEOROLOGICAL OBSERVATIONS, 1913

(From the Borough Meteorologist's Report).

Month.	Barometer	Readings of Thermometers.					Elastic Force of the Aqueous Vapour.	Mean Amount of Humidity Saturation per 100°.	Rain.		Registered Sunshine in Hours.
	Corrected and Reduced to 32° Far. Mean sea level.	Maximum.	Minimum.	Mean.	Range.	Dew-point.			Amount Collected.	Number of Days.	
	"	°	°	°	°	°	"	%	"		h. m.
January	29·744	42·8	35·5	38·24	7·7	36·8	·218	93·3	4·976	21	9–36
February ...	30·160	46·1	35·6	40·50	10·4	36·7	·218	89·7	1·608	12	26–48
March	29·779	47·5	36·0	41·26	11·4	37·5	·225	85·8	4·614	26	56–18
April	29·883	51·6	39·6	45·12	12·4	40·2	·249	80·1	5·193	18	58–30
May	29·905	56·0	45·1	50·85	14·1	46·0	·311	79·0	3·402	20	98–42
June	30·044	63·7	49·4	55·00	14·3	48·6	·343	74·8	2·965	18	116–36
July	30·078	65·1	51·3	56·20	13·8	50·7	·370	76·6	1·237	12	132–42
August	30·074	66·4	51·0	57·07	15·5	52·2	·391	79·4	3·312	11	128–0
September ...	29·984	64·4	50·6	56·21	13·9	50·3	·365	78·0	2·069	12	109–18
October	29·823	56·5	46·2	50·23	10·2	46·7	·319	86·2	2·211	18	50–12
November. ...	29·807	50·8	41·7	45·79	9·1	41·9	·266	87·2	4·797	28	25–24
December. ...	30·064	44·8	37·6	41·04	7·1	36·1	·213	84·9	3·076	19	16–24
Mean or Total 1913	29·945	54·6	43·3	48·12	11·6	43·6	·290	82·9	39·460	215	828–30
Yearly Averages, 1887-1912 ...	29·976	53·4	41·6	46·91	11·7	41·7	·278	81·5	41·877	211	1014–51

SECTION II.

Infectious Diseases
AND
Hospital Isolation.

Notification of Infectious Diseases.

During the year a total of 986 notifications were received. There were 208 scarlet fever, diphtheria 118, enteric 53, puerperal 4, erysipelas 70, pulmonary tuberculosis 349, non-pulmonary tuberculosis 158, and ophthalmia neonatorum 26. Of the eight ordinary infectious diseases this is the lowest number recorded for a period of 19 years. The distribution in wards can be seen in the subjoined table.

The deaths numbered 3 from scarlet fever, 32 from diphtheria, 16 from enteric fever, and from the non-notifiable diseases, diarrhœa 152, measles 85, and whooping cough 49.

The combined notification rate for scarlet fever, diphtheria and enteric fever for the Lancashire Towns was as follows :

Bolton	**2·14**	per 1000 population.
Wigan	2·27	,,
Blackburn	2·84	,,
Bootle	2·84	,,
Burnley	3·75	,,
Warrington	3·85	,,
Liverpool	4·49	,,
Bury	6·35	,,
Manchester	6·85	,,
Oldham	7·01	,,
Rochdale	7.05	,,
Salford	7·23	,,
Preston	9·39	,,
St. Helens...	9·40	,,

TABLE V.

DISTRIBUTION OF NOTIFIED DISEASES IN WARDS, 1913.

WARDS.	Scarlet Fever.	Diphtheria and Memb. Croup.	Enteric Fever and Continued Fever.	Puerperal Fever.	Erysipelas.	Total.	Rate per 1000.	Ophthalmia Neonatorum.	Acute Poliomyelitis.	Pulmonary Tuberculosis.	Non. Pul. Tuberculosis.
West	16	12	7	...	5	40	1·5	7	...	48	30
Halliwell	36	6	6	...	8	56	2·5	1	...	45	19
Bradford	15	12	4	2	9	42	2·1	3	...	41	14
Derby	7	12	3	...	11	33	1·7	7	...	40	17
East...	8	1	3	...	8	20	2·0	1	...	23	13
Rumworth	9	20	5	...	3	37	3·9	...	...	17	8
Church	5	2	4	1	1	13	1·5	...	...	18	8
North	11	4	...	...	2	17	2·2	1	...	16	6
Exchange	2	...	...	...	1	3	·6	...	...	29	10
Old Borough... ...	109	69	32	3	48	261	2·0	20	...	277	125
Great Lever	25	7	6	1	8	47	3·6	2	...	17	6
Tonge	17	8	...	...	3	28	2·7	1	...	7	6
Astley Bridge	24	4	3	..	5	36	4·2	1	...	10	6
Smithills	7	6	1	..	1	15	1·9	1	...	17	4
Hulton	14	11	2	...	1	28	4·2	1	...	14	5
Deane-cum-Lostock ...	...	2	6	...	1	9	2·0	...	...	4	2
Darcy Lever-c-Breightmet	8	2	3	...	3	16	3·8	...	...	1	3
Heaton	4	9	...	...	...	13	4·3	...	...	2	1
Added Area	99	49	21	1	22	192	3·3	6	...	72	33
Extended Borough ...	208	118	53	4	70	453	2·4	26	...	349	158

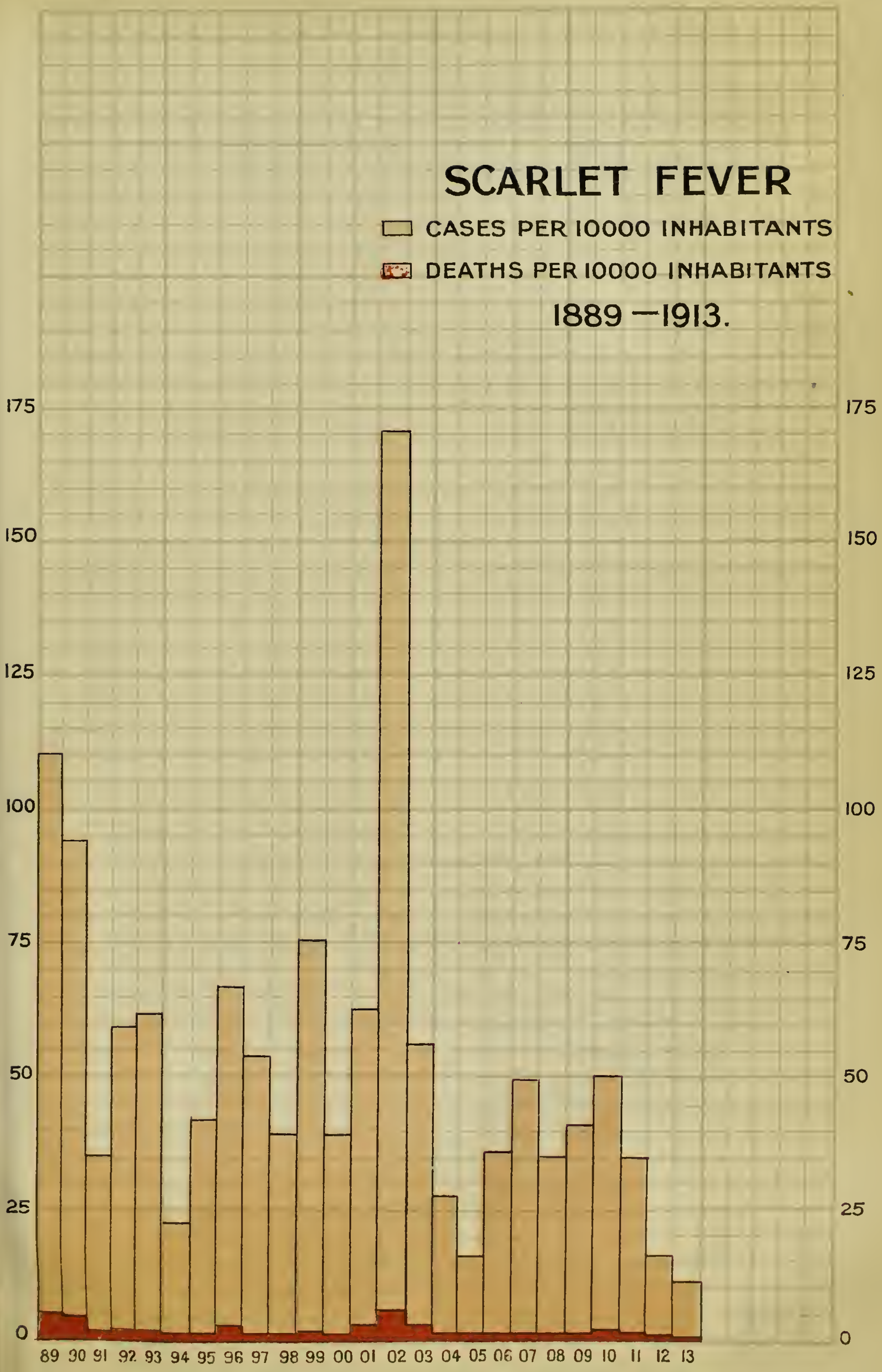
SCARLET FEVER
☐ CASES PER 10000 INHABITANTS
▨ DEATHS PER 10000 INHABITANTS
1889 —1913.
175
150
125
100
75
50
25
0
175
150
125
100
75
50
25
0
89
90
91
92
93
94
95
96
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TABLE VI.

INFECTIOUS DISEASES NOTIFIED FROM 1880 TO 1913.

Year	Small-pox	Scarlet	Diphtheria, Memb Croup	Enteric Contin'd	Typhus	Puerperal	Cholera	Erysipelas	Total	Rate per 1000 o pop'tion	Phthisis	Opthal. Neon.
1882...	267	259	19	77	30	3	...	...	655	6·1	...	...
1883...	3	193	9	79	9	3	1	...	207	1·9	...	...
†1884...	13	303	11	153	6	3	4	...	493	4·5	...	...
1885...	6	186	8	57	...	4	...	...	261	2·3	...	...
1886 ..	...	322	18	60	3	3	...	...	406	3·6	...	...
1887...	...	721	22	107	2	1	...	...	853	7·5	...	...
1888...	11	924	51	180	2	4	...	...	1172	10·3	...	...
1889...	4	1256	92	127	16	...	...	...	1495	13·0	...	...
1890...	...	1071	74	102	15	4	...	...	1266	10·9	...	...
1891...	...	411	93	145	16	5	...	...	670	5·8	...	...
1892..	1	683	112	98	2	8	1	...	905	7·7	...	...
1893...	44	747	123	170	2	4	...	...	1090	9·2	...	...
1894...	2	267	25	118	...	16	...	...	428	3·6	...	...
1895...	10	495	34	238	...	7	...	...	784	6·5	...	...
1896...	1	816	29	186	...	10	...	...	1042	8·6	...	...
1897...	...	645	17	125	...	8	...	...	795	6·5	...	...
1898...	...	487	27	208	...	2	...	...	724	5·9	...	...
*1899...	...	1226	52	321	...	12	...	...	1611	9·9	...	...
1900...	1	644	56	208	...	9	...	13	931	5·6	...	...
1901...	...	1066	91	219	...	8	...	28	1412	8·3	...	...
1902..	63	2910	202	196	...	14	...	71	3456	20·2	80	...
1903...	55	971	142	180	...	15	...	85	1448	8·3	92	...
1904...	19	477	150	160	...	9	...	69	884	5·0	92	...
1905 ..	2	292	103	165	...	5	...	78	645	3·6	149	...
1906...	...	630	84	197	...	9	...	123	1043	5·7	252	...
1907...	...	866	79	135	...	18	...	89	1187	6·4	188	...
1908...	...	637	76	192	...	10	...	84	999	5·3	200	...
1909...	5	760	95	138	...	4	...	105	1107	5.8	235	...
1910...	...	906	106	71	...	8	...	91	1182	6·2	245	...
1911...	..	649	172	88	...	10	...	124	1043	5·7	245	26
1912...	...	313	92	48	...	3	...	109	565	3·1	321	23
1903 to 1912	8·1	650·1	109·9	137·4	...	9·1	...	95·7	1010·3	5·5	201·9	...
1913...	...	208	118	53	...	4	...	70	453	2.4	349	26

First Year Notification, 1878. † Isolation Hospital Established. * Borough Extended.

Scarlet Fever.

208 cases were notified with 3 deaths equal to a death rate of ·01 per 1000 of the population.

It is the lowest number notified since 1885, a year after the Isolation Hospital was opened, and the lowest death rate recorded. The greatest reduction occurred in the fourth quarter where the incidence is usually the highest.

94 cases or 45 per cent were admitted to the Borough Fever Hospital.

SCARLET FEVER IN PREVIOUS YEARS.

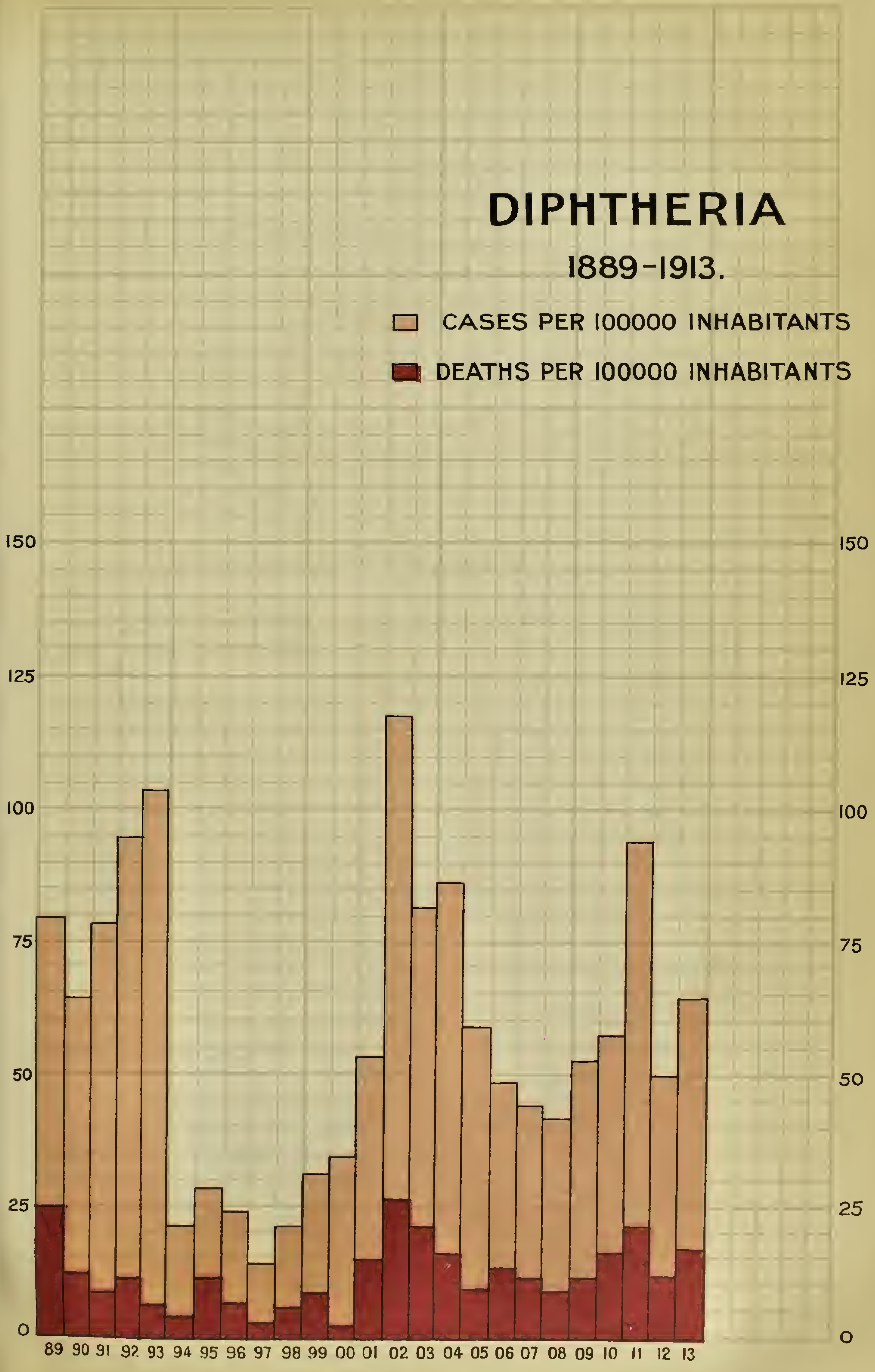
Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1902	534	710	734	932
1903	434	258	184	95
1904	158	84	115	120
1905	55	56	67	114
1906	106	79	113	332
1907	192	148	199	327
1908	235	207	110	85
1909	144	166	169	281
1910	219	236	254	197
1911	212	139	154	144
1912	100	44	52	117
1913	73	49	36	50

Diphtheria and Membranous Croup.

118 cases were notified in 112 houses with 32 deaths. It is below the average for the last 10 years, and equal to a death rate of ·17 per 1000 of the population.

39 out of the 61 schools were affected, the highest number in any school being 5. There were 56 cases amongst school children and 35 contacts of school children.

94 tubes of antitoxin were supplied for 64 cases to 32 medical practitioners.



DIPHTHERIA

1889-1913.

The age distribution was :—

Age.	No. Notified.	Deaths.
0—1	3	3
1—2	5	3
2—3	12	4
3—4	13	2
4—5	13	6
5—10	40	14
10—15	16	—
15 and upwards	16	—

QUARTERLY RETURNS IN PREVIOUS YEARS.

Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1900	18	5	9	24
1901	17	15	17	42
1902	47	53	32	70
1903	60	25	37	20
1904	19	21	46	64
1905	48	16	21	18
1906	25	21	19	19
1907	27	19	12	21
1908	27	13	15	21
1909	35	14	15	31
1910	21	18	21	45
1911	66	37	29	40
1912	34	17	20	21
1913	37	25	18	38

Enteric Fever.

53 cases occurred in 49 houses, the deaths numbering 16. This is a very small number compared with previous years and runs closely the lowest record of last year. Again several were probably due to the eating of polluted mussels and cockles, the sale of which we have no power to prohibit.

As will be seen from the table, there was no unusual incidence in the fourth quarter, the notifications being evenly distributed throughout the year.

Quarterly Returns in Previous Years.

Year.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
1899	88	32	91	110
1900	57	26	40	85
1901	34	15	83	87
1902	51	32	43	70
1903	34	21	68	55
1904	24	23	39	72
1905	49	17	41	57
1906	45	39	31	82
1907	30	22	39	44
1908	32	28	61	71
1909	46	24	14	54
1910	15	7	16	33
1911	16	14	32	26
1912	10	6	9	23
1913	15	10	14	14

Other Notifiable Diseases.

Only 4 cases of puerperal were notified, and there were no notifications of either acute polio myelitis or cerebro-spinal fever.

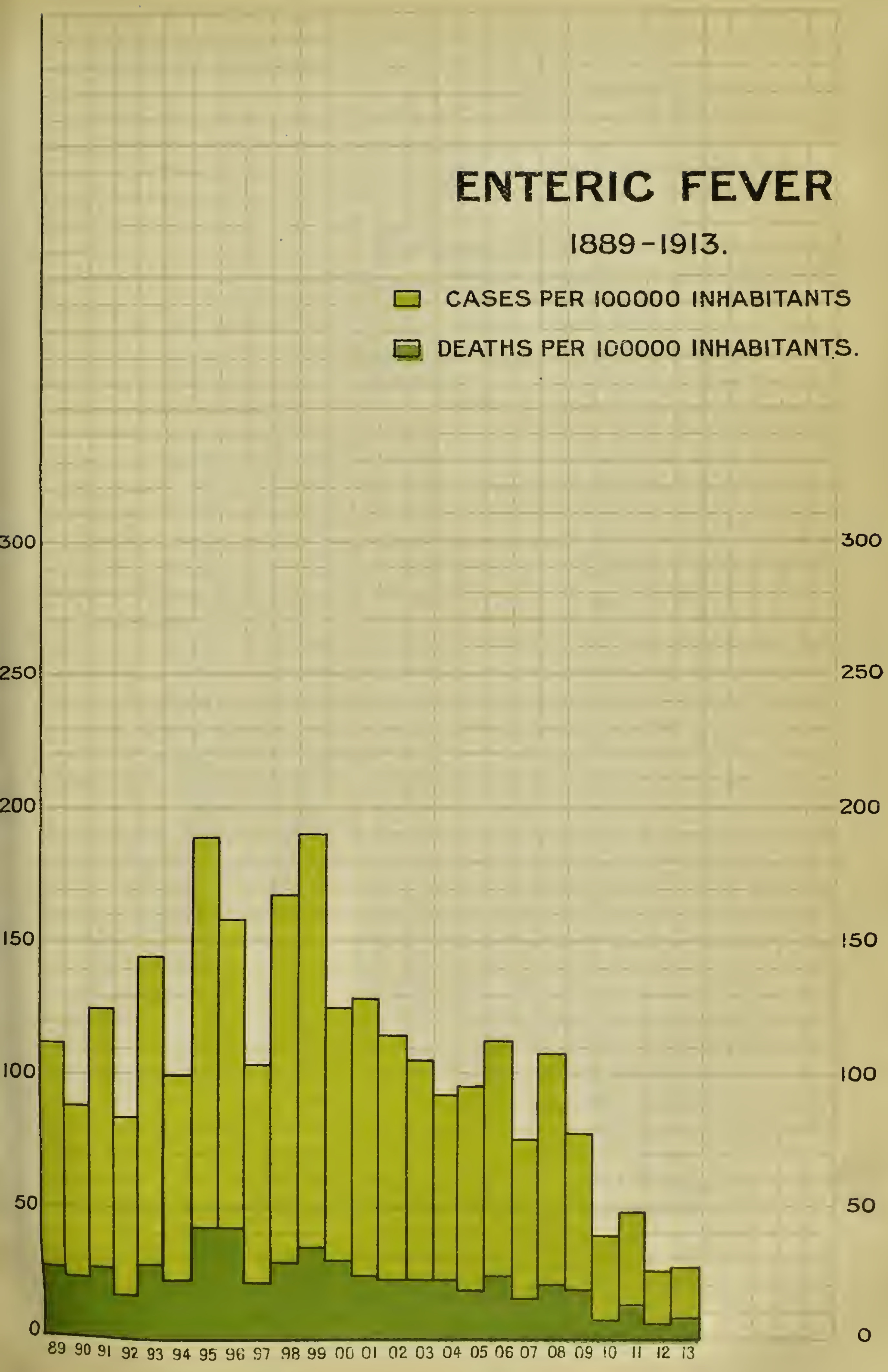


TABLE VII.

ENTERIC FEVER IN BOLTON, 1882—1913.

Year	Cases	Case-rate per 1,000 of Population	Deaths	Death-rate per 1000 of Population	Death-rate per cent. of Cases
1882	77	·72	17	·15	22·0
1883	75	·69	17	·15	22·6
1884	152	1·39	26	·23	17·1
1885	57	·51	17	·15	29·8
1886	60	·53	12	·10	20·0
1887	107	·95	31	·27	28·9
1888	180	1·58	31	·27	17·2
1889	125	1·09	31	·27	24·8
1890	102	·88	22	·18	21·5
Av. 1881-90	103	·92	22	·19	22·3
1891	145	1·24	30	·26	20·6
1892	97	·83	19	·16	17·5
1893	170	1·44	34	·28	20·0
1894	117	·98	25	·20	21·3
1895	237	1·98	50	·41	21·0
Av. 1891-95	153	1·29	31	·26	20·4
1896	186	1·54	50	·41	26·8
1897	125	1·02	24	·20	19·2
1898	208	1·69	35	·28	16·8
1899	321	1·97	55	·33	17·1
1900	208	1·26	47	·28	22·5
Av. 1896-1900	209	1·51	42	·25	20·1
1901	219	1·29	39	·23	17·8
1902	192	1·13	36	·23	18·8
1903	178	1·04	36	·21	20·2
1904	158	·91	37	·21	23·4
1905	164	·94	34	·19	20·7
Av. 1901-05	182	1·06	36	·21	20·1
1906	197	1·12	40	·22	20·3
1907	135	·76	26	·14	19·2
1908	192	1·08	37	·20	19·2
1909	138	·77	33	·18	23·9
1910	71	·39	12	·06	16·9
Av. 1906-10	146	·82	29	·16	19·9
1911	88	·84	23	·12	26·1
1912	48	·24	11	·06	22·9
1913	53	·28	16	·08	30·1

Measles and Whooping Cough, &c.

85 deaths occurred from measles, an increase on the previous year and above the average for the last 5 years. Most of the deaths occurred during March and April, the epidemic ceasing in July. It was found advisable to close 18 Infants' Departments and two schools in order to prevent the spread of the disease.

49 deaths occurred from whooping cough which were evenly distributed throughout the year. This is a slight increase on the previous year but below the average for the last five years.

Towards the end of the year mumps became prevalent but there were very few cases of chicken pox and other non-notifiable diseases.

Diarrhœa.

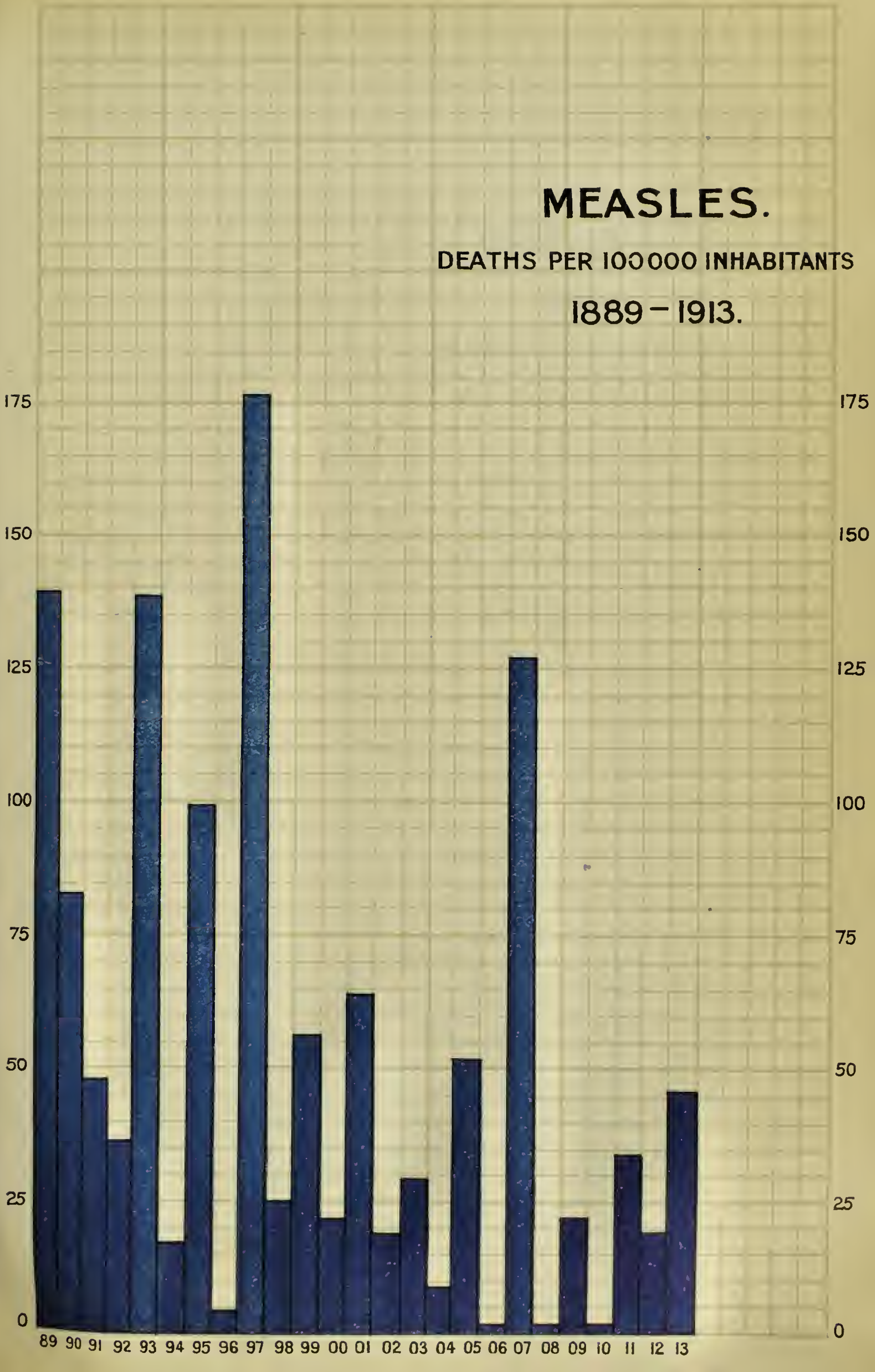
The total deaths from diarrhœal diseases, including those of epidemic and summer diarrhœa, and infective enteritis, numbered 152; those under 2 years of age dying from all forms of diarrhœa and enteritis numbered 171. The chart, as in previous years, refers to all forms of diarrhœa at all ages but not enteritis.

Compared with the previous year, 1913 was a dry summer but the ground temperature was not above the average and never reached 57 deg. during the seven hottest weeks of the year.

The rate per 1000 was ·82 and was higher than the average for the last five years which was ·62.

The death rate for previous years is given in Table III. under mortality from epidemic diseases.

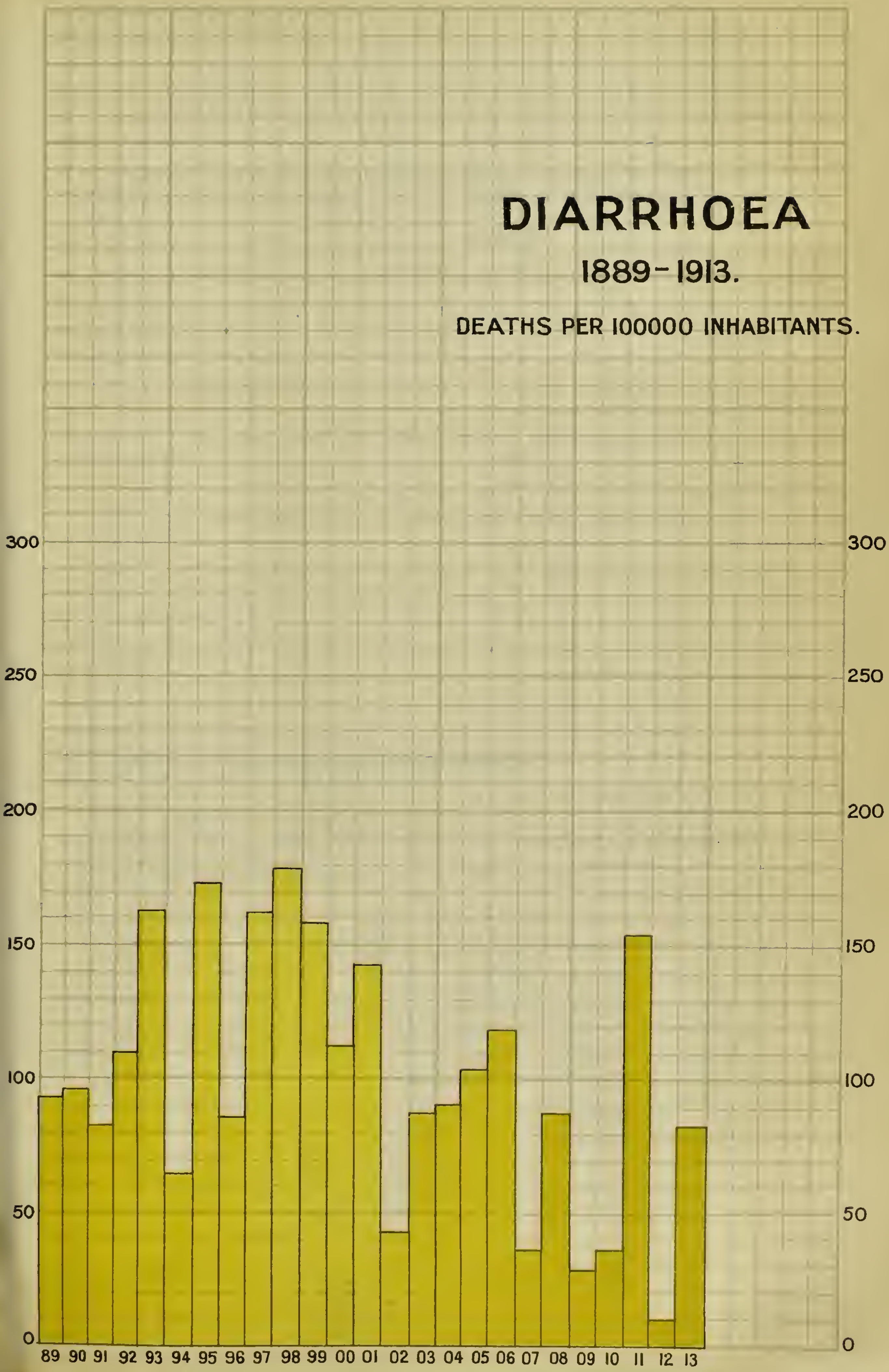
The Health Visitors paid visits to the most necessitous cases and reported on the sanitary condition of all houses where deaths under 1 year of age occurred.



MEASLES.

DEATHS PER 100000 INHABITANTS

1889 - 1913.


DIARRHOEA
1889-1913.
DEATHS PER 100000 INHABITANTS.
300
250
200
150
100
50
0
89
90
91
92
93
94
95
96
97
98
99
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DIARRHŒA AND ENTERITIS DEATHS (UNDER 2 YEARS), 4 FEET TEMPERATURE, AND RAINFALL, JULY, AUGUST AND SEPTEMBER, 1913.

WEEK ENDING		No. of Deaths.	Average 4-Feet Temperature.	Monthly Rainfall.	
				1913	1912
July	5	3	54·3	1·237"	5·35"
	12	1	54·7		
	19	...	55·0		
	26	3	55·3		
August	2	3	55·7	3·312"	8·86"
	9	6	56·6		
	16	6	55·5		
	23	7	56·2		
	30	13	56·5		
September	6	12	56·7	2·069"	3·09"
	13	16	56·4		
	20	7	55·6		
	27	6	55·2		

Phthisis (Pulmonary Tuberculosis).

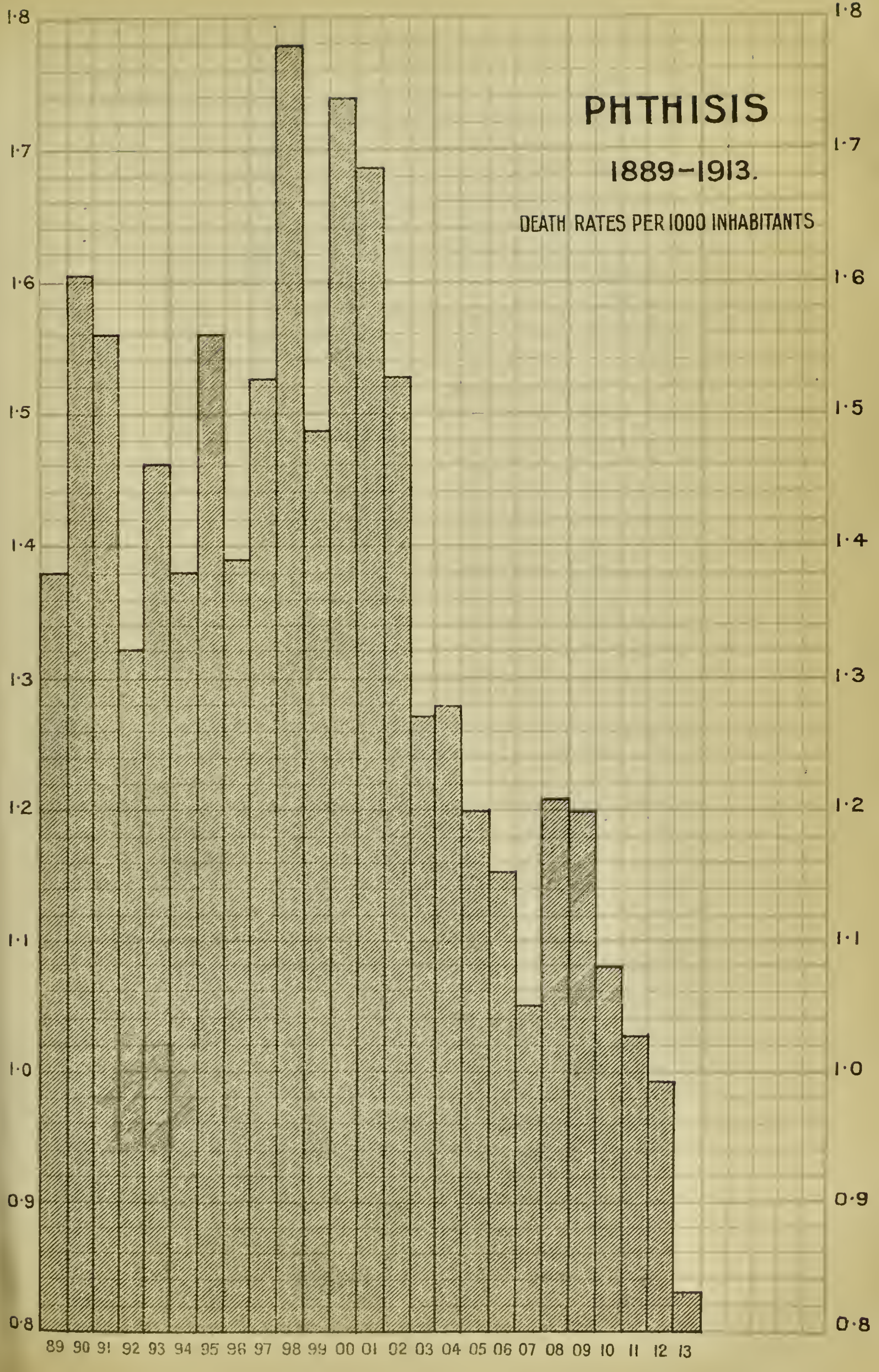
154 deaths were registered from this disease, including those Bolton residents who died in institutions outside the Borough, as compared with 182 deaths last year. It is equal to a death-rate of ·83 per 1000 inhabitants, a reduction of 16% on last year and is the lowest yet recorded.

The age and sex distribution are shewn below:—

SEX.	Total	AGES							
		Under 5	5-15	15-25	25-35	35-45	45-55	55-65	65 and upwards
Male	91	...	5	9	24	24	15	12	2
Female	63	2	5	14	16	15	6	3	2
Total.........	154	2	10	23	40	39	21	15	4

The occupations of those who died were as follows:—

Weaving	13
Spinning	13
Other Cotton Operatives	7
Bleaching and Printing	2
Metals, Machines, and Implements	17
Coal Mining	5
Buildings	7
Conveyance of Men and Goods	7
General Labourers	16
Food, Drink, and Tobacco	8
Dress, etc.	2
Commercial or Business Clerks	3
Household Work	28
School Children	7
Miscellaneous Occupations	11
No Occupation or Occupation Unknown	8
	154



PHTHISIS

1889–1913.

DEATH RATES PER 1000 INHABITANTS

TABLE VIII.

Phthisis Death Rates in Wards, 1908-1913.

Ward.	1908	1909	1910	1911	1912	Aver'ge 1908 to 1912	1913
West	1·38	1·34	1·69	1.13	1·13	1·33	·90
Halliwell	1·17	·93	1·01	1·00	·85	·99	·71
Bradford	1·21	1·46	·96	1·01	·91	1·11	1·31
Derby	1·15	1·25	1·15	·78	1·10	1·08	·89
East	1·48	1·39	·80	·91	1·33	1·18	·93
Rumworth	·82	1·27	1·02	1·67	1·09	1·17	1.28
Church	1·65	·83	·83	1·31	·95	1·11	·60
North	1·75	1·34	·94	1·61	·94	1·31	·53
Exchange	1·80	2·46	1·05	·89	1.78	1·59	1·61
Old Borough ...	1·31	1·29	1·13	1·09	1·05	1·17	·94
Great Lever	·35	1·20	.83	·89	·39	·73	·69
Tonge	·95	·84	1·34	1 02	·30	·89	·79
Astley Bridge	1·10	·73	·97	·72	·95	·89	·35
Smithills	1·43	1·07	·88	·56	1·36	1·06	·39
Hulton	1·04	·84	·65	1·27	1·55	1·07	·90
Deane-cum-Lostock ...	1·28	·75	·97	·71	·93	·92	·22
Darcy Lever-c-B'met..	1·01	1·25	·74	1·46	·96	1·08	·23
Heaton	1·57	1·89	1·10	·35	1·37	1·25	·99
Added Area ...	·97	1·01	·95	·89	·85	·93	·59
Extended Borough.	1·21	1·20	1·08	1·03	·99	1·10	·83

TABLE IX.

Deaths from Pulmonary Tuberculosis in Bolton in Previous Years.

Year	Residents in Public Institutions out of Borough				Public Institutions in Borough		Private Houses	Total	Rate
		Lunatic Asylums			Infirmary				
	Workhouse	Workhouse Cases	Other Cases	Others	Residents	Non-Residents			
1901	43	2	4	...	...	...	236	285	1·69
1902	36	2	11	1	2	...	201	253	1·49
1903	34	3	6	1	1	1	173	218	1·27
1904	20	4	8	...	...	...	189	221	1·28
1905	22	4	10	...	3	...	171	210	1·20
1906	19	1	5	...	2	...	175	202	1·15
1907	40	6	5	...	...	...	135	186	1·05
1908	52	...	10	...	1	...	153	216	1·21
1909	53	2	6	...	3	...	152	216	1·20
1910	47	...	7	1	...	...	140	195	1·08
1911	39	...	6	2	...	...	140	187	1·03
1912	37	...	9	3	...	...	133	182	·99
1913	37	1	5	2	...	...	109	154	·83

NOTIFICATION OF TUBERCULOSIS.

349 first notifications of pulmonary tuberculosis were received during the year under the Bolton Corporation Act, 1905, and 158 first notifications of non-pulmonary tuberculosis were received under the Public Health (Tuberculosis) Regulations, 1912, which came into operation on the 1st February, 1913. The ward and age distribution of the cases notified is shown in Table VI. of the Appendix.

Of the pulmonary cases notified, 175 were males and 174 females, 63 being under the age of 14. The source of the notifications is as follows:—266 were from private practitioners, 45 from the school medical inspector, and 38 from the medical officers of institutions. 69 or 19 per cent. died within the year of notification.

The occupations of those pulmonary cases notified were :—

Cotton Spinning	40
Cotton Weaving	37
Bleaching and Printing	5
Metals, Machines and Implements ...	36
Coal Mining	6
Building Construction	15
Painters, Decorators, etc.	4
Conveyance of Men and Goods	6
General Labourers	19
Food, Drink and Tobacco	7
Dress, etc.	8
Commercial or Business Clerks... ...	6
Domestic Service	12
Household Work	42
School Children	49
Miscellaneous Occupations	27
No Occupation or Occupation Unknown ...	30

The details as to notification of pulmonary tuberculosis both during the periods of voluntary and compulsory notification are given below.

VOLUNTARY NOTIFICATION.

Year.		Institutions.	Medical Practitioners.	Total
1902	(6 mos).	14	66	80
1903		17	75	92
1904		37	55	92
1905	(9 mos).	11	43	54

COMPULSORY NOTIFICATION.

Year.		Institutions.	Medical Practitioners.	Total
1905	(3 mos).	19	76	95
1906		36	216	252
1907		45	143	188
1908		35	165	200
1909		58	177	235
1910		27	218	245
1911		36	209	245
1912		70	251	321
1913		83	266	349

In March 1913 an enquiry was made as to the number of school children suffering from all forms of tuberculosis. The information was cbtained from the out of school list of the Education Department, the Inspection Clinic register, and the notifications to the Medical Officer of Health, with the following results :—

PULMONARY TUBERCULOSIS.

Boys	46	Excluded from school	5
Girls	51	Excluded from school	17

Others were attending school and were either nearly cured or not in an infectious state.

NON-PULMONARY TUBERCULOSIS.

Bones, Joints, Intestines, &c.	39	Excluded	31
Glands and Skin	37	Excluded	3

Of the 39 suffering from tuberculosis of bone, joints, &c., 7 were well enough to attend school, 18 were able to get about (7 with crutches) and 11 were not able to get about. Three were in institutions.

TREATMENT.

The arrangements foreshadowed in my last annual report have been continued throughout the year and are likely to become permanent They are the maintenance of 16 beds at Meathop Sanatorium, Westmoreland, and 10 beds at Wilkinson Sanatorium, Bolton, for early cases; a pavilion for 20 patients at the Bolton Borough Hospital to be immediately replaced by a new pavilion of 24 beds for moderately advanced and observation cases. All these beds are intended for patients suffering from pulmonary tuberculosis. In all probability a few beds for non-pulmonary disease in children will be obtained at Heswall Country Hospital for Children. There are also provided for early cases at Wilkinson's 20 beds for uninsured patients who do not make application either through the Insurance Committee or the Public Health Department but who are treated free of charge.

A Tuberculosis Dispensary is established in the Public Health Office and tuberculin treatment has been given since March, 1913. Here examinations and consultations take place.

The following is the summary of applications in 1913 :—

Total applications of insured and non-insured persons for examination and consultation (pulmonary and non-pulmonary cases)	212
Number Insured	157
Number Uninsured	55
Consultations re suspects and contacts ...	14
Number in which there was no evidence of pulmonary tuberculosis	9
Non-pulmonary cases examined	16

The patients admitted for treatment during the year were as follows :—

SANATORIA	Insured	Uninsured	Total
Crossley ...	1	—	1
Meathop ...	47	7	54
Wilkinson ...	28	72	100
HOSPITAL (BOROUGH)	45	21	66

DISPENSARY:

Pulmonary ...	35 ...	19 ...	44
Non-pulmonary	6 ...	4 ...	10

The result of treatment in Institutions from 1906-1913 as shewn here includes all those insured and non-insured persons sent by the Sanitary Committee but does not include those uninsured persons treated at Wilkinson Sanatorium.

Year	Arrested	Impr'd	Slightly Impr'd	No Impr'm't	Died	Total
1906	1	1	—	1	—	3
1907	7	—	3	2	—	12
1908	9	9	—	3	—	21
1909	12	8	1	5	—	26
1910	9	4	1	4	—	18
1911	12	10	—	3	—	25
1912	11	10	2	2	—	25
1913	37	37	1	7	1	83

The results of an enquiry made into the present condition and working capacity of persons treated in sanatoria since 1906 is given in the subjoined table. The enquiry was made in September, 1913, and refers to patients discharged from institutions not later than June 1913.

Year	Total	At Work	Not Working, Able to get about	Ill	Dead	Untraced
1906	3	1	—	—	2	—
1907	12	5	1	—	5	1
1908	21	7	3	—	8	3
1909	27	13	1	—	13	—
1910	18	8	3	—	6	1
1911	25	16	3	—	5	1
1912	25	14	5	—	6	—
1913 (Six Months)	22	16	2	1	3	...
	153	80	18	1	48	6
Percentage		52%			31%	

Of the insured persons suffering from pulmonary tuberculosis who applied for sanatorium benefit 80 per cent. received institution treatment either in sanatoria or hospital.

Of the few who received domiciliary treatment several were so poor as to require assistance both in food and clothing. Amongst the uninsured a large proportion were in a state bordering on destitution. So far as they could do so, the Sanatorium Benefit Sub-Committee of the Insurance Committee gave assistance, but where they were unable to do so, the Sanitary Committee of the Corporation authorised the Medical Officer of Health to provide immediate temporary assistance where necessary.

Number assisted	31
With milk only	19
Food tickets	4
Milk and food	8
Number of food tickets	16
Pints of milk...	983

PREVENTIVE MEASURES.

It is not necessary to describe in detail the routine measures which have been in operation since 1905, and which have been fully explained in previous reports.

On the receipt of notification and on registration of death the Sanitary Inspector inspects the house, records its sanitary condition, obtains information as to the health of other members of the household and the history of the disease, makes enquiries and gives advice, both orally and by leaflet as to contacts and other matters, and if the case appears to him to be a necessitous one, refers it to the Health Visitor for revisit and for special report to the Medical Officer of Health.

All houses are disinfected after the death or removal of the patient and whenever desired by the occupier.

GENERAL REMARKS.

Our experience in Bolton shews what has so often been said before that tubercular patients readily respond, especially children and early cases, to a purer and brighter atmosphere and better food. There is no doubt of the good effect of sanatorium or hospital treatment in arresting the disease in some cases and prolonging the life of others. In many, this improvement is aided by tuberculin judiciously applied and especially is this so in certain non-pulmonary cases.

In some instances however even when treatment is offered, it has to be declined owing to the insufficiency of funds for maintaining the family during the absence of the father, and in the case of the mother, from want of means to provide a substitute.

All are agreed also that whatever form of treatment is given those do best where home conditions are good and the feeding intelligent.

Further investigations will only make more certain that tuberculosis is a disease of poor dwellings and especially of low wages.

For immediate relief generous assistance is required for the sufferers to enable them to take advantage of proper treatment and to keep their families, and for the prevention of the disease, improved housing conditions and the power to enjoy a fuller life.

Treatment of Infectious Diseases and Pulmonary Tuberculosis at the Borough Hospitals.

During the year there were admitted 94 persons suffering from scarlet fever, 26 from enteric fever, 8 from diphtheria, 61 from pulmonary tuberculosis, and 12 from other diseases, a total of 201.

There was 1 death from scarlet fever, 3 from enteric fever, 4 from diphtheria, 4 from pulmonary tuberculosis, and 1 from other disease.

During the year owing to the still smaller number of infectious diseases that required to be isolated, we were enabled to use right through the year, one of the pavilions for pulmonary tuberculosis. A special pavilion is now being erected and will shortly be opened for this purpose.

The staff has not been increased and consists of :—

1 Matron
3 Sisters
1 Ambulance Nurse
4 Staff Nurses
8 Probationers
3 Wardmaids
1 Cook
5 House Servants
4 Laundresses
2 Porters
2 Gardeners

Two nurses contracted enteric fever and one died. Otherwise there has been no serious illness to report amongst the nursing staff.

I have to thank Dr. Moffatt, and the Matron, Miss Bateman, for the careful and efficient working of the institution, and the staff for the care bestowed upon the patients and the devotion to their duties.

TABLE X.

ADMISSIONS AND DEATHS OF SCARLET AND ENTERIC FEVER PATIENTS IN PREVIOUS YEARS.

Year.	SCARLET FEVER.			ENTERIC FEVER.		
	Admitted.	Deaths.	Death-rate per cent.	Admitted.	Deaths.	Death-rate per cent.
1899	503	13	2·5	64	8	12·5
1900	416	12	2·9	66	9	13·6
1901	581	13	2·2	58	13	22·4
1902	1176	25	2·2	27	2	7·4
1903	522	25	4·7	44	5	11·3
1904	275	8	2·9	53	11	20·7
1905	178	3	1·6	81	17	20·9
1906	383	3	0·7	80	11	13·7
1907	539	18	3·3	80	11	13·7
1908	378	16	4·2	93	15	16·1
1909	475	15	3·1	63	8	12·6
1910	546	13	2·3	33	5	15·1
1911	358	14	3·9	45	12	26·6
1912	174	9	5·1	21	4	19·0
1913	94	1	1·0	26	4	15·3

SECTION III.

Work of Health Visitors.
Notification of Births.
Control of Midwives.

Work of Health Visitors.

The following Acts are now in force in Bolton for the purpose of the Sanitary Authority in the care of infants and older children.

1902. Midwives Act.
1907. Notification of Births Act.
1908. Medical Inspection Act.
1908. Children Act.
1910. Notification of Ophthalmia Neonatorum.

The Health Visitors are specially concerned with the notification of births, infants under one year of age, ophthalmia neonatorum, the Midwives Act, and necessitous consumptives.

Every case of ophthalmia neonatorum is visited, parents are recommended to carefully carry out the instructions of the medical attendant, and, where special treatment is required, "recommends" are given for the Bolton Infirmary, where arrangements are made for treatment by one of the ophthalmic surgeons.

Two cases of blindness in both eyes, due to ophthalmia neonatorum, came to the knowledge of this department during the year.

Although the personal care and devotion of mothers is, in the great majority of instances satisfactory, a few cases of neglect were found, and several who were in very necessitous circumstances. During the summer months sterilised and dried milk was supplied for the use of 19 infants, and 31 mothers were assisted, 20 with milk, 5 with food tickets, and 6 with food and milk.

It is the duty of the Health Visitors to draw my attention to any insanitary conditions and overcrowding which they notice in the houses visited by them, and if any defects are noticed the Sanitary Inspector follows this up by inspection and report. Much assistance is given to this department by the Schools for Mothers and the Progressive League's Dinner Kitchen. At the four centres maintained by the School for Mothers no less than 495 mothers attended during the year, the attendances numbering 2,641. The society has supplied 6,000 quarts of milk, 12 tins of dried milk, and 678 dinners. The Dinner Kitchen for Mothers supplied 2,726 meals to 80 mothers.

While still believing that poverty, or at all events insufficiency of means is the chief cause of infantile mortality and the lowering of the standard of physical motherhood in Bolton, it cannot be denied that there is still much ignorance with regard to mothercraft and domestic hygiene, and much could be done if practical lessons were given to the older girls in school, and to young women before marriage.

Much of the advice now given both by officials and voluntary workers is unintelligible owing to the want of knowledge of the simplest rules of hygiene.

Details concerning the births notified during the year :—

1.	Total births notified	3727
2.	Total births registered	3999
3.	Workhouse births...	23
4.	Workhouse births (legitimate) ...	5
5.	Workhouse births (illegitimate) ...	18
6.	Born living	3584
7.	Stillborn	143
8.	Notified by Medical Men	653
9.	Notified by Midwives	3074
10.	Deaths under one year of age ...	569

Summary of visits made by Health Visitors :—

1.	Total visits to houses	8403
2.	Birth enquiries	2603
3.	Revisits to births	4378
4.	Death enquiries, under one year ...	295
5.	Visits re summer diarrhœa (deaths under one year)	86
6.	Visits re puerperal cases	4
7.	Visits re ophthalmia cases	26
8.	Visits to consumptives	1127
9.	Necessitous consumptives assisted ...	31
10.	Necessitous mothers assisted ...	31
11.	Midwives' houses inspected... ...	56

The following conditions were found amongst newly born children visited by the Health Visitors :—

1.	Healthy	2148
2.	Delicate	235
3.	Premature	110
4.	Stillborn	110

Method of Feeding.

1.	Breast fed only	1690
2.	Breast fed partly	328
3.	Artificially fed	475
4.	Long Tube Bottles used	50

Other Information.

1.	No. of mothers returning to work within three months of birth of child	313
2.	Houses clean	2309
3.	Houses dirty	276

Method of Feeding of Infants who Died from Diarrhœa.

1.	Breast fed only	9
2.	Breast fed partly	16
3.	Hand fed	61

Closet Accommodation in Houses where Diarrhœa Deaths occurred.

1.	Privy middens	43
2.	Pails	13
3.	W.W.C.	16
4.	F.W.C.	14

Method of Feeding of Infants Dying from all Causes.

1.	Breast fed only	60
2.	Breast fed partly	71
3.	Hand fed	164

Control of Midwives.

64 notifications of their intention to practice within the Borough were received from midwives during the year.

One midwife died, and two left the district, leaving a total of 61 on the register at the end of the year.

The following 227 notifications were received from 37 midwives, in accordance with the regulations of the Central Midwives Board.

146	Sending for Medical Help.
4	Deaths of Children.
76	Stillbirths.
1	Prepared Body for Burial.

The midwives' houses have been inspected, and I have examined the case books, instruments, temperature and pulse records, and appliances of each during the year. From the registers of cases I found that they attended 3,168 cases out of a total of 3,999 births in the year. When there has been danger of infection the midwives' clothing has been disinfected at the Disinfecting Station.

SECTION IV.

Animals and Food Inspection.

Public Analyst's Report.

Animal and Food Inspection.

(W. H. Bridge, M.R.C.V.S.)

The question of how to deal with the most ruinous disease, tuberculosis affecting our bovine animals, has for many years exercised the most careful thought and energies of the veterinary profession. There are contending opinions as to the exact nature, character and influence exerted by the bovine tubercular bacilli, even amongst the most illustrious and competent bacteriologists of our time, and so until this decision can be placed outside the region of doubt, it is of the utmost importance that the public health of our district should be safeguarded by our health authorities, and to this end many important measures have been enacted and competent qualified inspectors have been engaged to enforce their provisions. The Dairies, Cowsheds & Milkshops Order of 1885 gives us considerable power in the supervision and control of all the dairy farms in our district, and in addition to the above measure the Board of Agriculture and Fisheries have issued the Tuberculosis Order of 1913, which became operative in May last, and is now on its trial for a period of five years. Whatever may be thought of this Order, it certainly is a definite if modest attempt to deal with the difficulty, and we may fervently hope that if proper use is made of it some good will result from its enforcement, and as important experience will be gathered during its administration, we may expect that even before the expiration of the five years, some alteration or amendments will be made. The main features of the Order are to remove from our herds the two most dangerous classes of tubercular animals, viz: (*a*) those with tuberculosis of the udder; (*b*) those which are emaciated by tubercular disease. There is, however, another affected class quite as dangerous, which if allowed to remain housed with others, contaminate the whole building, and thus disseminate the disease and particularly so to those animals most susceptible to the infection. I refer to that class which are clinically affected, and which are not included in the Order, not having tubercular udders or yet being emaciated, but at the same time are a source of infection, and milk drawn from other cows in such surroundings, is very liable to become polluted with tubercular bacilli. No doubt in the near future this matter will receive its due consideration. I think that not a little difficulty in the more efficient working of the Order may be found in the fact that we have not the whole-hearted sympathy of the farmer, though so far, I have not met with any declared objection or opposition, but for the most part they do not court or welcome official inspection, but from whatever cause, there can be no disputing the fact that, since the beginning of 1913, an improved condition of our dairy stocks has resulted, and which could be further accomplished if a more judicious and conservative policy were adopted in regard to the slaughter of healthy and promising calves.

ANTHRAX.

A case of anthrax was detected at the Public Abattoirs in a cow which had been sent for slaughter and inspection. The carcase was mmediately destroyed and all necessary measures executed.

PARASITIC MANGE.

Four outbreaks of parasitic mange affecting twelve horses, occurred during the year, and fortunately all the horses recovered. A second outbreak was detected in a stable belonging to the same owners where a large number of horses were kept. All orders relative to disinfection and cleansing of the stables and premises have been effectively carried out.

SWINE FEVER.

Swine Fever regulations are still in force in our district, and all the conditions demanded by the Order have been observed. No case has been notified to us during the year.

General Inspection.

Beasts	6263
Calves	430
Sheep	41682
Swine	7064
Store Cattle...	2897
Slaughter-houses	623
Railway Sidings	334
Markets and Fairs	742
Shops	642
Dairy Farms	135
Cattle on Farms	2501

Carcases found to be Affected with Disease.

No.	Disease.	Cows.	Bulls.	Heifers.	Bullocks	Calves	Sheep.	Pigs	Whole carcases destroyed.	Parts & organs destroy'd
558	Tuberculosis	535	5	16	...	1	...	1	43	515
38	Dyspepsia ...	33	2	2	...	...	...	1	...	9
10	Traumatitis ...	8	...	...	...	...	1	1	2	7
11	Rheumatism	8	1	1	...	1	...	...	...	8
8	Fractures ...	6	...	1	...	1	...	...	...	6
17	Pleurisy ...	16	...	...	...	...	...	1	...	17
4	Pneumonia ...	4	...	...	...	...	...	...	...	4
4	Pericarditis ...	3	...	1	...	...	...	...	...	4
11	Hepatitis ...	11	...	...	...	...	...	...	2	9
6	Nephritis ...	4	...	...	...	...	...	2	1	5
4	Diarrhoea ...	4	...	...	...	...	...	...	...	2
2	Hyperæmia ...	1	...	...	...	...	...	1	2	...
6	Mastitis ...	6	...	...	...	...	...	...	...	6
2	Metritis ...	2	...	...	...	...	...	...	...	2
3	Parturient Apoplexy	3	...	...	...	...	...	...	...	...
3	Parturition ...	2	...	1	...	...	...	...	...	1
2	Eversion of Womb ...	2	...	...	...	...	...	...	...	2
4	Abscess ...	4	...	...	...	...	...	...	...	4
7	Moribund ...	5	...	...	...	...	2	...	7	...
1	Actinomycosis	1	...	...	...	...	...	...	...	1
1	Anthrax ...	1	...	...	...	...	...	...	1	...
1	Jaundice ..	...	...	...	...	...	...	1	1	...
1	Laryngitis ...	...	...	1	...	...	...	...	...	1
1	Black Quarter	1	...	...	...	...	...	...	1	...
2	Emaciation ...	2	...	...	...	...	...	...	2	...
1	Ovarian Abscess ...	...	...	...	...	...	...	1	...	1
50	Suspected & Minor Diseases ...	31	3	16	...	...	...	...	...	21
758		693	11	39	...	3	3	9	62	625

From the table on page 47 it will be observed that an increased number of cattle were slaughtered under our supervision during the year under consideration, and the explanation is to be found in the fact that a greater difficulty has been experienced in obtaining the necessary supply at the usual market, where operations have been unusally harassed by the limitations imposed, consequent upon the carrying out of the various Orders of the Board of Agriculture and Fisheries in connection with Foot and Mouth Disease. Consequently, our local meat purveyors have been compelled to secure what supplies were possible from the surrounding districts.

Farm Visitation.

I have paid 161 visits to the farms in the area of the County Borough of Bolton during 1913, and examined 2,501 cattle, and may state broadly that the general health and physique of dairy cattle is much improved, and the sanitary conditions more perfectly observed. Very occasionally, however, a case of lapsing into a state of indifference and neglect is detected, but the offenders have been sharply reminded of the penalty imposed by the Dairies, Cowsheds, and Milkshops Order for such contravention.

I have obtained and submitted for bacteriological examination 18 samples of milk from suspected cattle, six of which were found to contain tubercle bacilli. The six cows supplying this milk were destroyed, as was also another cow, whose milk was found to contain blood and pus in large quantities. The remaining eleven samples were found to be free from infective properties.

Under the Tuberculosis Order of 1913, ten cows have been dealt with, four of which were slaughtered and the owners compensated. Six others were slaughtered under Article 10 of the Order, for which no compensation was allowed.

Mussels.

Further information respecting the polluted condition of mussels coming into our district has been received, and the shell-fish vendors have been notified of the danger to the health of the public by the consumption of such mussels.

MISCELLANEOUS.

I have attended and given veterinary supervision to all the horses belonging to the various departments of the Corporation.

A careful and systematic inspection is maintained upon the Fish Market, Slaughter-houses, CattleFairs, Railway Sidings, Tripe Works, and Knacker s Yard, in which the sanitary conditions are rigidly enforced.

OTHER FOODS DESTROYED.

	No.	Cwts	Qrs.	lbs.
Beef	...	14	...	...
Mutton	...	...	2	...
Chickens	7	...	...	...
Pigs' Stomachs Pigs' Lungs and Livers	...	5	2	...
Fish	...	17	...	...
Rabbits	216	...	...	...
Sheep's Feet	...	2	1	...
Peas (Garden)	...	13	...	...
Mushrooms	...	1	...	...
Blackberries	...	...	...	60

Food and Drugs.

The Inspectors employed under this section have obtained 414 samples of food for analysis. Twenty-nine samples of milk were found to be adulterated, and proceedings were instituted against ten of the vendors, and also against a shop-keeper for selling margarine not labelled according to the Margarine Act, whilst warning letters were sent to several other offenders

The samples purchased were as follows:—

Nature of Sample.	No.
Milk	196
Cream	3
Butter	34
Cheese	14
Margarine	5
Lard	12
Lard Substitutes	1
Vinegar...	7
Flour	7
Coffee	13
Coffee Mixtures	2
Cocoa	8
Sugar	1
Jams and Confectionery	3
Custard Powder and Bun Flour	3
Rice	7
Baking Powder	4
Suet	1
Mustard	1
Pepper	7
Cordials	5
Bacon	3
Potted Shrimps	2
Potted Meat	10
Ground Ginger	2
Tinned Peas	2
Spirits	7
Buttered Scones	7

A further and complete list will be found in the Analyst's Report.

LEGAL PROCEEDINGS.

Legal proceedings were instituted against eleven offenders—ten for milk adulteration, as enumerated :—

Fined	£5	and	12/-	costs	...	Total	£5 12s. 0d.
,,	£2	,,	13/-	,,	...	,,	£2 13s. 0d.
,,	£2	,,	9/-	,,	...	,,	£2 9s. 0d.
,,	£1	,,	9/-	,,	...	,,	£1 9s. 0d.
,,	10/-	,,	14/6	,,	...	,,	£1 4s. 6d.
,,	10/-	,,	11/-	,,	..	,,	£1 1s. 0d.
,,	10/-	,,	11/-	,,	...	,,	£1 1s. 0d.
,,	10/-	,,	9/-	,,	...	,,	19s. 0d.
,,	10/-	,,	7/-	,,	...	,,	17s. 0d.
,,	5/-	,,	9/6	,,	...	,,	14s. 6d.
,,	2/6	,,	10/-	,,	...	,,	12s. 6d.
							£18 12s. 6d.

Milk and Cream Regulations, 1912.

The following is the report under the above regulations for the year 1913 :—

1. Milk and cream not sold as preserved cream.

		No. of samples examined for the presence of a preservative.		No. in which a preservative was reported to be present.
Milk	..	196	...	1 (13 grs. per gall. of boric acid)
Cream	...	2	...	—

Vendor was cautioned by the Sanitary Committee.

2. Cream sold as preserved cream.

(*a*) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct.

(1) Correct statements made ... 1
(2) Statements incorrect ... ... —

(*b*) Determination made of milk-fat in cream sold as preserved cream.

(1)	Above 35 per cent.	1
(2)	Below 35 per cent.	—

Thickening substances absent in all cases.

OTHER OBSERVATIONS.

The sample of preserved cream was declared at 0·50 per cent. boric acid, the amount found, though not exceeding 0·50 per cent, was greater than the quantity recommended for December by Dr. Hamill (see L.G.B. report), and the sample was consequently regarded as adulterated.

Public Analyst's Report.

(HARRY HURST, B.Sc., F.I.C.)

The following table gives the total number of samples analysed, and tests made during the year 1913:—

SANITARY COMMITTEE.	
Samples submitted by Inspectors under the Sale of Food and Drugs Acts	414
Examinations made for the M.O.H. ...	461
Examinations made for the Veterinary Inspector	21
Miscellaneous analyses and examinations ...	18
WATER COMMITTEE.	
Analyses of Water	331
GAS COMMITTEE.	
Number of tests made	344
Total	1589

Samples submitted by Sanitary Inspectors (Food and Drugs Acts).

Foods.	Total Analysed.	Genuine.	Adulterated.	Per cent. Adulterated.
Milk	196	167	29	14·8
Cream	3	2	1	33·3
Butter	34	32	2	5·9
Cheese	14	10	4	28·6
Margarine ...	5	5	...	...
Lard	12	12	...	...
Lard substitutes...	1	1	...	...
Flour	7	7	...	...
Coffee	13	13	...	...
Coffee Mixtures ...	2	2	...	...
Cocoa	8	8	...	...
Sugar	1	1	...	...
Jams and Confectionery ...	3	2	1	33·3
Custard Powder and Bun Flour	3	3	...	...
Rice	7	7	...	...
Baking Powders...	4	4	...	...
Suet	1	1	...	...
Mustard	1	1	...	...
Vinegar	7	6	1	14·3
Pepper	7	7	...	...
Cordials, etc. ...	5	4	1	20·0
Bacon	3	...	3	100·0
Potted Shrimps ...	2	...	2	100·0
Potted Meats ...	10	7	3	30·0
Ground Ginger ...	2	2	...	...
Tinned Peas ...	2	2	...	...
Spirits	7	7	...	...
Buttered Scones...	7	6	1	14·3

The following samples of drugs have also been analysed, all of which were found to be genuine except one sample of grey powder. Cream of tartar, 3; tartaric acid, 4; Friars balsam, 2; camphorated oil, 5; castor oil, 2; liquorice powder, 2; syrupus rhei, 1; olive oil, 6;

citrate of magnesia, 1; milk of sulphur "flowers," 3; linseed meal, 2; turkey rhubarb, 1; nerve powders, 1; cough tablets, 1; mercury ointment, 1; Gregory Powder, 3; seidlitz powders, 1; washing soda, 1; grey powder, 2; hair restorers, 2; saffron, 1; white precipitate, 1; almond oil, 1.

Total number of samples analysed	414
Total number of samples adulterated	49
Per cent. of samples adulterated	11·8

The per cent. of samples adulterated for England and Wales for the year 1912 was 7·6. The figures for 1913 are not yet available.

MILK. The average composition (exclusive of skimmed milk) of the whole of the milk received for 1913, is:—

Milk-fat, 3·33; Solids, not fat, 8·86; Water, 87·81.

The following shows the average composition of Bolton milk during each month of the year.

Month.	No. of Samples.	Milk-Fat.		Non-Fatty Solids.	
January	19	3·23	3·23	8·76	8·74
February	7	3·40		8·79	
March	16	3·07		8 67	
April	35	3·42	3·42	8·88	8·88
May	15	3·41		8·82	
June	22	3·43		8·95	
July	7	3·30	3·20	9·00	8·87
August	12	3·17		8·77	
September	10	3·13		8·84	
October	25	3·62	3·54	9·04	8·96
November	9	3·42		8·90	
December	16	3·59		8·94	

The extent to which adulteration was practised in the Borough is shown thus:—

Percentage.	No. containing added water.	No deficient in fat.
5% and under	5	6
over 5% and not greater than 10%	—	4
„ 10% „ „ 15%	—	4
„ 15% „ „ 20%	—	4
„ 20%	—	2

In addition, the following samples contained added water and were also deficient in fat.

15·4% added water, 2·0% deficient in fat.
1·8% added water, 3·3% deficient in fat.

and one sample contained 13·0 grains per gallon of boric acid.

In order that some idea of the quality of the milk supply of Bolton may be ascertained, I have adopted the following arbitrary classification :—

Milk containing less than 3·1% fat,	poor quality,	29·2%
,, ,, 3·1 to 3·4% fat (inclus.)	fair quality,	29·7%
,, ,, more than 3·4% fat,	good quality,	41·1%

(Minimum legal limit is 3 per cent.)

The high percentage noted under the heading "poor quality" is indicative of the process of toning, *i.e.*, addition of skimmed to whole milk, which reprehensible practice is undoubtedly the accompaniment of fixing the legal standard for milk.

All the milks were examined for preservatives. I am very pleased to note that one sample only of those submitted has given evidence of containing boron compounds, and all were free from formalin, nitrites, or nitrates.

It is most important that milk should be delivered in a pure state without the addition of any preservative, these latter are quite unnecessary, and undoubtedly give rise to digestive trouble.

CREAM. Three samples of Cream have been analysed, of those one contained a boron preservative equivalent to 18·5 grains per pound of boric acid.

BUTTER. 34 samples of butter have been examined, of which two were adulterated. These samples consisted of margarine containing less than 10% of butter fat.

No sample has been taken containing more than the legal maximum of water (16%).

Seven of the samples contained boron preservatives, and in no case was the limit (0·5%) exceeded, the average being 0·1% approximately.

CHEESE. During the year some comment has been caused by the adverse reports of your Analyst on certain cheeses.

The fact that these cheeses were half-meat and of Dutch origin was not declared at the time of purchase.

Cheeses may be divided thus:—

	Per-cent. of Fat.
Whole-meat	33—38
Half-meat	20—22
Skim-cheese	0—8

In reports I have adopted as the limit of fat in half-meat cheese 16 per cent. This being the fat content that may be expected in cheese made of milk of fat content 1·5%. The Government minimum limit for fat being 3%.

Cheese falling below this standard, I have, in the absence of any official limit, regarded as adulterated, considering the purchaser to be prejudiced.

A circular was issued informing the grocers of the Borough, of the fat and water content they might reasonably expect in the various classes of cheeses. Since when, the quality of half-meat cheese has markedly improved.

FLOUR. 7 samples of flour were submitted by Inspectors, of these 2 samples showed evidence of bleaching.

Personally I am of opinion that such bleaching is unnecessary, that the consumer is obtaining a less nutritious article insomuch as inferior wheats may be artificially whitened and passed as firsts, and moreover there is introduced an ingredient which retards digestion, even in small doses.

The flours were examined for phosphatic improvers, and in 4 cases traces were found, but beyond drawing attention to their presence no further action was taken.

The samples were also examined for persulphates, which is being increasingly used as an improver, but in no case was this drug found.

Rice. Of the 7 examined, only 1 was "faced," *i.e.*, polished with talc. This containing 0·27% *i.e.*, well below the limit suggested by Dr. Hamill in the L.G.B. report.

The number of samples taken has been too small to make safe deductions but the inference seems to be that the wholly unnecessary polished article is being superseded by the unpolished genuine variety.

Jams and Confectionery. A sample of lemon cheese examined in the laboratories was found to be preserved with both boron compounds and salicylic acid. The quantities, however, were so small (3·5 & 0·63 grains per pound, respectively) that no action was considered necessary.

Cocoa. 8 Cocoas have been submitted by Inspectors. All were satisfactory and contained no added sugar, no foreign starch and were free from excess of husk.

Vinegar. During the year 7 samples have been taken, of these 1 has been reported against as containing a deficiency in acetic acid.

The sample in question contained only 3·70% of acetic acid, which is quite useless for pickling purposes.

The manufacturers were informed, and agreed to withdraw the article from sale.

Peas. 2 samples of both bottled and tinned peas were examined especially for the presence of copper and other deleterious metals, these in all cases were found to be absent.

Bacon, Potted Meats and Shrimps. 3 samples of bacon have been examined. All of these contained small but appreciable amounts of boron preservative. The bacons in question were not, probably of local origin, but from overseas.

The quantity of preservative being small no action was taken.

Of the 10 samples of potted meat, 3 contained preservative, these amounts, though unnecessary, were small, and no action was taken.

The potted shrimps contained 8·6 & 19·1 grains per pound of boric acid respectively.

SPIRITS. Only 7 samples of spirits have been taken during the year, and of these the sample of brandy deserves comment. This, whilst being of satisfactory alcoholic content, was deficient in esters, on which the characteristic taste and bouquet of the spirit, to a large extent, depend.

There is however so much room for honest difference of opinion, that beyond calling attention to the fact that the sample was of inferior quality no further comment was made.

LIME JUICE AND LEMON CORDIAL. Of the 5 samples examined, one was adversely commented on as containing sulphurous anhydride to the extent of 2·5 grains per pint.

There is pressing need for legislation with regard to the amount of this preservative to be allowed in wines and cordials. The L.G.B. have declined to suggest a limit, and in view of this it was thought inadvisable to take proceedings.

OTHER FOODS. Where no remarks are made the foods are genuine and of good quality.

INFORMAL SAMPLES. 4 foods have been taken by Inspectors, of these 2 have been reported as adulterated.

Milk	(16·7% deficient in fat)
Butter	(Consisted of margarine)

I should like to see more of this class of sampling, though no proceedings can be taken when prejudice to the purchaser is discovered. Informal sampling is invaluable for detecting the dishonest dealer especially where purchase is effected by means of a private individual acting under the direction of the Inspector.

DRUGS. 47 samples have been examined, and of these one only has been found to be adulterated, and in this case of a trivial character· This shows a very satisfactory state of things.

During the third quarter of the year, two samples of "hair restorers" were examined, of these one contained lead in a combination as lead acetate.

This metal is a cumulative poison, *i.e.*, the person suffers no serious discomfort until there is introduced into the system, an amount approaching a poisonous dose, when symptoms of poisoning develop. This amount varies, due to the idiocyncrasy of the person.

Although medical authorities are of opinion that lead cannot be absorbed through the skin and so give rise to trouble in this direction, the dangers are apparent when one considers the possibility of contamination arising from the fingers, especially from the finger nails, from whence the lead preparation may not be entirely removed by washing the hands.

Moreover these preparations are sold accompanied by literature wherein no attention is called to their poisonous nature, but entirely the reverse, for they are generally designated as "harmless."

BACTERIOLOGICAL EXAMINATIONS FOR THE MEDICAL OFFICER OF HEALTH.

	Number Examined.	Positive.	Negative.	Doubtful.	Percentage of Positive.
Tuberculosis ...	367 ...	94 ...	273 ...	— ...	25·6
Diphtheria ...	47 ...	15 ...	29 ...	3 ...	31·9
Enteric Fever ...	47 ...	18 ...	29 ...	— ...	38·3

EXAMINATIONS FOR THE VETERINARY INSPECTOR.

	Number Examined.	Positive.	Negative.	Percentage of Positive.
Milks for Tubercle	18 ...	6 ...	12 ...	33·3
	(One milk contained blood and pus cells).			
Blood for Anthrax	2 ...	1 ...	1 ...	50·0
For Actinomycosis	1 ...	1 ...	0 ...	100·0

Miscellaneous Work. During the year the following work has been undertaken. 7 samples of mussels for cleanliness, at the instance of the M.O.H. The findings are as follows :—

Percentage wt. of flesh to total wt. of shell-fish.	No. of colonies growing on Gelatine at 21C.	No. of colonies growing on Agar at 37C.	Smallest fraction of fish containing coli-like organisms.	Smallest fraction of fish containing streptococci	Smallest fraction of fish containing enteritidis sporogenes.
49	800,000	30,000	1/500	1/1000	1/100
45·5	4,000,000	360,000	1/1000	1/500	1/500
48	3,000,000	150,000	1/1000	1/500	1/500
39	7,000,000	580,000	1/1000	1/1000	1/1000
46·8	10,000,000	1,100,000	1/1000	1/1000	1/1000
43	600,000	20,000	1/1000	1/500	1/500
38·3	5,000,000	70,000	1/500	1/100	1/500

The presence of coli-like organisms or spores of enteritidis sporogenes in so small a quantity as 1/500 of a mollusc is in my opinion indicative of serious sewage contamination, and the whole of the samples were adversely commented on.

Investigation of the flash point of LIQUID METAL POLISHES at the instance of the Coroner.

This work was the outcome of a burning fatality which occurred at a local hotel.

I attended the inquest and explained the inflammable nature of these commodities. My report and recommendations were forwarded to the Home Office.

In connection with conveyance of liquid metal polishes, I was retained by the N. E. Ry. Co., to give evidence on their behalf in the case of Railways *v* Recketts & Sons, heard in London before the Railways and Canals Commission. The verdict was entirely favourable to the Railways.

1 Sand at the instance of the Borough Engineer.
2 Mortars " " "

These call for no comment.

Bacteriological examination of a Disinfectant. This had a Rideal Walker coeficient as guaranteed in the contract.

Examination of Urine at the instance of the Chief Constable.

Examination of Stomach contents and viscera at the instance of the Coroner. Bacteriological findings consistent with food poisoning.

Examination of gloves and paper for blood, at instance of County Police. The presence of blood was confirmed.

Attendance at inquest at instance of Coroner.

A fatality having occurred during the making of disinfectant shells by melting and moulding napthalene, I was requested by the Coroner to undertake an investigation and explain the nature of the substance commonly known as " white carbon."

The remaining analyses call for no comment.

The fees for this miscellaneous work have been paid into the coffers of the Corporation.

WATERWORKS COMMITTEE.

During the year, weekly examinations of the whole of the Borough supply, both chemical and bacteriological, have been made.

The findings have been published in the monthly abstracts of the Water Committee Report.

A reference to these analyses will show that filtration has been consistently efficient, and that Bolton possesses, in every way, a supply of undoubted purity.

At the request of the Waterworks Engineer an examination of the solids in solution of a sample of water was made, the findings and comments thereon appear in the abstracts for May.

Gas Committee.

Examinations have been made twice weekly on the quality of the gas supplied, for

1. Illuminating Power.
2. Total Sulphur.
3. Ammonia.
4. Sulphuretted Hydrogen.

and reports have been furnished to the Gas Commitee.

These reports show :—

Average illuminating power—18·27 candle power.
,, total sulphur—21·98 grains per 100 cubic feet.
,, ammonia—0·502 ,, ,, ,, ,,
,, sulphuretted hydrogen—none.

which findings are quite satisfactory.

The illuminating power varied between a minimum of 17·25 and a maximum of 19·05 standard candles.

SECTION V.

Sanitary Work.

Abstract of Sanitary Work.

PLACES UNDER INSPECTION.

Common Lodging-houses	59
Houses Let-in Lodgings	70
Factories	373
Factory Chimneys	263
Workshops and Workplaces	710
Bakehouses	271
Offensive Trades	27
Slaughterhouses	49
Cowkeepers	157
Cowsheds	331
Milkshops	470
Public Sanitary Conveniences	17
Travelling Vans	66

ABSTRACT OF WORK DONE DURING 1913.

Complaints from Public	251
Nuisances Reported	3399
Letters Written or Verbal Notices	1210
Informal Notices Issued	1093
Legal Notices Issued	449
Smoke Observations	675
Smoke Nuisances Reported	23
Smoke Notices Served	18
Houses Fumigated	619
Articles Disinfected	3536
Articles Destroyed	188
Houses, etc., Limewashed	367
House Repairs	835
Overcrowding abated	30
Houses Demolished	22
Houses Closed	16
Houses Made Fit	8
Privy Ashpits Converted into Water Closets	748
Drains Reconstructed	143
Yards Completely Flagged	185
Samples of Food, etc., Purchased	414
Samples Adulterated or other Offences	50
Adulteration Prosecutions	11

Public Health and Medical Inspection Staff.

1	Medical Officer of Health and School Medical Officer.
1	Deputy Medical Officer of Health and Assistant School-Medical Officer.
1	Public Analyst and Bacteriologist.
1	Veterinary Surgeon and Chief Meat Inspector.
1	Assistant Meat Inspector.
5	Sanitary Inspectors and Food and Drugs Inspectors.
1	Sanitary Inspector.
5	Clerks.
3	Health Visitors.
2	School Nurses.
3	Ambulance Drivers and Disinfectors.
2	River and Urinal Cleaners.
10	Bath Officials.
5	Lavatory Attendants.
34	Hospital Staff (excluding Ainsworth Small-pox Hospital).

Housing of the Working Classes.

By the 26th regulation of the ninth schedule of the Bolton Corporation Act 1872, the Council are empowered to order the closing of any house which the Medical Officer of Health has certified as unfit for habitation.

In the first printed annual report of the Medical Officer of Health—1874--a list of such houses was given, and in every annual report since, the work under the 1872 Act and other Housing Acts has been referred to.

For over twenty years the control of this work has been delegated to the unhealthy dwellings sub-committee of the Sanitary Committee.

A table has been included in the reports for the last ten years giving in summary form the same details as are now required by the Housing (Inspection of District) Reg. 1910.

Records of the inspection of such houses have been kept together with plans shewing the surrounding property.

In 1894 the Sanitary Committee drew up regulations for the Inspectors of Nuisances instructing them "to carry out regular and systematic inspection of their districts and to visit each sub-district once in each month," and moreover it is part of their duty to bring to the notice of the Medical Officer of Health any house which might be considered unfit for habitation.

In 1897 under the direction of the Medical Officer of Health a special inspection and report was made on 700 houses of the unfit type, and application was made to the Local Government Board for a loan of £20,000 for the reconstruction of some areas where these houses were situated.

In 1903 an inspection was made by the Medical Officer of Health and the Inspectors of Nuisances of all the back-to-back and single houses in the Borough, a printed list of these houses was presented to the Sanitary Committee and a resolution passed thereon.

From time to time whenever it was thought desirable reports have been made to the Sanitary Committee by the Medical Officer of Health, and on many occasions the Committee themselves have visited houses and areas brought to their notice either by the Medical Officer of Health or in any other way.

As a result of these inspections and of the letters and notices sent to the owners of the houses, during the last 17 years 975 houses have been demolished, 439 closed, 474 made fit, and 105 improved; that is a total of 1,995 houses. Where the houses have been made fit a properly paved yard and separate fresh-water closet have been provided, and the houses demolished have improved the circulation of air and light in the neighbourhood.

In 1891, in the old Borough, the back-to-back and single houses numbered 3051. At the present time there are 1082 back-to-back and 391 single houses. On three occasions application has been made to the Local Government Board under the Housing of the Working Classes Act, 1890, for power to deal with groups of houses as insanitary areas, and occasionally the Medical Officer of Health has certified houses as unfit for habitation under the Bolton Corporation Act, 1872, but in the great majority of cases there has been no difficulty in persuading the owners to comply with the requirements of the unhealthy dwellings sub-committee.

The table here given summarises the work done since 1874.

TABLE I.

ABSTRACT OF HOUSES DEMOLISHED, CLOSED, MADE FIT OR IMPROVED (1874 TO 1913).

Date	Demolished	Closed	Made Fit	Improved	Total
1874—1885	...	...	...	...	293
1886—1895	...	...	...	...	245
1896	23	9	10	29	71
1897	85	14	24	21	144
1898	17	11	8	...	36
1899	22	7	3	...	32
1900	59	44	8	...	111
1901	42	22	79	...	143
1902	18	18	19	...	55
1903	85	20	19	42	166
1904	52	3	46	...	101
1905	39	9	10	10	68
1906	69	17	17	...	103
1907	43	65	24	...	132
1908	124	43	43	...	210
1909	111	17	87	...	215
1910	115	58	45	...	218
1911	5	44	24	1	74
1912	44	22	2	...	68
1913	22	16	8	2	48
Total ...	975	439	476	105	1995

During these last 14 years it should be noted that 9137 closets have been converted from the conservancy system to the water carriage system and the reconstruction of the drains has been effected at the same time. Moreover, during that period, there have been erected about 7,000 new houses all of which have been built in accordance with the bye-laws.

It is known that during the last 20 years in Bolton 10,000 houses have been purchased by working-class owners through a local society. I do not think it will be far wrong to say that during the last 16 years over a third of the working class population have either been rehoused or had their dwellings improved and put into a sanitary condition, and these in the most congested parts of the Old Borough.

According to the 1901 census enumeration there were in Bolton, 36,177 inhabited houses, the average number of persons per house being 4·5 ; in 1911 there were 40,681 houses with an average of 4·4 persons per house. Of these 38,000 had a gross rental of less than £26 per annum, 1,670 were let at a rental of less than 3/1 per week, 13, 829 from 3/1 to 4/6 per week, and 20,774 from 4/7 to 8/6 per week.

In July, 1913, a return from the Chief Rate Collector showed 1066 habitable but empty houses, of which 926 were to be let at a rental of less than £26 per annum.

The houses have been kept in a good state of repair and fit for habitation ; 835 notices, mostly informal, were served for small repairs, 30 cases of overcrowding were abated. These were generally of a temporary character and in none was it necessary to take legal proceedings. 259 dirty houses had notices served for limewashing. The number of new houses erected during the year was 294, the supervision of which is in the hands of the Borough Engineer and Surveyor. Two whole time Inspectors are employed in the work and in case of pressure one of the Assistant Surveyors assists. The Borough Engineer is of opinion that the buildings being erected, and which have been erected during the last 13 years, conform strictly to the bye-laws, and generally the buildings are superior to those erected before this period.

In 1901 the population of the Old Borough, where the density is 53·5 persons to the acre was 125,618; in 1911 the population had not materially altered, being 126,400. The increase of the population has taken place in the Added Areas where the density is 4·3 persons to the acre. This Added Area became part of the Borough in 1899 when the area was increased from 2,361 acres to 15,283 acres.

The amount expended, chiefly on demolitions, was from 1874 to 1895 a sum of £8,412, and from 1896 to 1913 a total of £34,532.

Housing Inspection.

Dwelling-houses inspected for all purposes and sanitary condition reported upon	20774
Houses inspected and records submitted to Sanitary Committee in accordance with regulations made by L.G.B. under Housing and Town Planning Act, 1909	167
Houses considered unfit for habitation	48
Representations made by M.O.H. under Bolton Corporation Act, 1872	5
Houses closed by order of Sanitary Committee under Bolton Corporation Act, 1872	5
Defects remedied without a closing order	43
Houses made fit after closing order...	Nil

General Character of Defects found:

House disrepair and dampness	55
Light and ventilation defective	52
Yards requiring paving	9
Yards common or insufficient	114
Drainage defective	28
Closet accommodation insanitary	37
Ashpits defective	11
Houses dirty	7
Houses overcrowded	Nil

TABLE II.

Enumeration of Back-to-Back and Single Houses in Wards, 1913.

Ward.	Back-to-Back	Single.	Total, 1913	Total, 1903
East	202	64	266	595
Derby...	221	33	254	375
Bradford	316	55	371	457
Exchange	123	97	220	324
West	85	75	160	211
Church	86	19	105	136
Halliwell	31	41	72	83
North	4	4	8	14
Rumworth	14	4	18	20
Astley Bridge	26	40	66	97
Smithills	26	32	58	58
Darcy Lever-cum-Breightmet	8	24	32	44
Tonge...	34	...	34	34
Deane cum-Lostock... ...	2	39	41	43
Total	1178	527	1705	2491

Closet Accommodation.

During the year 1913 there where 748 conversions of privy-middens or pails into water closets.

From 1899—1913 inclusive, 9137 closets have been converted at a cost to the Corporation of £18,217, and replaced by water closets and 272 have been demolished. In new houses, during the same period, 7838 water closets have been provided.

The present numbers of privy-middens and pails as compared with those of 1898 are :—

	Privy-middens.			Pails.	
District.	1898	1913		1898	1913
Old Borough ...	12740	6120	...	6782	6344
Added Area ...	7581	5375	...	22	26
Whole Borough	20321	11495	...	6804	6370

In the Old Borough in 1898 the numbers were :—

Privy-middens and Pails	19522
Water-closets	7587

At present the numbers are :—

Privy-middens and Pails	12464
Water-closets	17018

Formerly in the Old Borough 75 per cent were on the dry system, and 25 per cent. on the water-carriage system, now 42·2 per cent are on the dry system and 57·8 per cent. on the water-carriage system.

TABLE III.

CLOSET ACCOMMODATION, 1913.

	No. of Closets Converted or Demolished, 1913.				Conversions in Old Houses and Additions in New Houses, 1913.				Present Closet Accommodation, 1913.				Per Cent. on	
	P.M.	Pail.	W.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough ...	460	16	1	...	...	...	1	572	6120	6344	10985	6033	42·2	57·8
Great Lever ...	54	...	1	...	...	...	...	58	1242	...	1116	517	43·2	56.8
Tonge	63	...	...	...	...	...	...	82	1306	...	786	400	52·4	47.6
Astley Bridge ...	84	...	...	...	...	...	...	114	708	7	506	901	33·7	66·3
Smithills	25	...	...	...	...	...	...	44	369	3	728	507	23·1	76·9
Hulton	29	...	...	...	...	...	...	48	520	...	596	298	36·8	63·2
Darcy Lever-cum-Breightmet ...	...	...	...	...	...	...	...	23	628	...	183	151	65·3	34·7
Deane-cum-Lostock	15	...	...	...	...	...	...	58	382	4	213	239	46·0	54·0
Heaton	..	...	...	...	...	...	...	25	220	12	152	385	30·2	69·8
Extended Borough	730	16	2	...	...	...	1	1024	11495	6370	15265	9431	41·9	58·1

Common Lodging Houses.

The number of registered houses in Bolton is the same as in 1912, viz., 59, one house having been closed and one placed on the register. Accommodation is provided for 1644 persons.

The distribution of the houses is as follows :—

Ward.	Houses.	Rooms.	Beds.
Exchange	24	132	513
East	30	164	927
Church	3	18	79
Derby	1	10	43
West	1	5	14

All notices from the Sanitary Inspectors have been complied with and there has been no contravention of the bye-laws.

Accommodation for the sexes :—

Description.	Houses.	Males.	Females.	Couples.
Males only...	41	1247	—	—
Females only	1	—	18	—
Females and Couples ...	2	—	16	8
Males and Couples ...	7	94	—	18
Males, Females, and Couples	8	89	44	42
	59	1430	78	68

Houses Let-in-Lodgings.

Three houses were closed and one was placed on the register during the year making a total of 70 registered houses in the Borough at the end of the year.

The Ward distribution is as follows :—

Ward.	Houses.	Rooms.	Accommodation.
Exchange	36	128	345
East	20	69	174
Derby	14	61	180

The rooms let by these houses are as follows :—

1 house lets 8 rooms.
2 houses let 7 ,,
7 ,, ,, 6 ,,
4 ,, ,, 5 ,,
29 ,, ,, 4 ,,
11 ,, ,, 3 ,,
9 ,, ,, 2 ,,
7 ,, ,, 1 room.

Vans, Tents, &c.

66 vans have been inspected during the year, viz., 45 on the Wholesale Market and Victoria Square, 12 at Lee Clough, Astley Bridge, 6 on land in Bridgman Street, and 3 in Gate Street. All the vans were found to be in a clean state and they accommodated 61 males, 69 females and 29 children. All the occupants were in good health with the exception of one child who was notified in March as suffering from scarlet fever and a female age 15 notified in April as suffering from pulmonary tuberculosis. Both cases were at Astley Bridge.

Factories.

28 complaints were received from the Factory Inspector during the year, of which 19 referred to unsuitable closet accommodation, 5 to insufficient closet accommodation, 1 to urinal drain choked, 1 to accumulation of trade refuse and 2 to insufficient means of escape in case of fire.

FACTORY AND WORKSHOP INSPECTION.—1. INSPECTION.

Premises.	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries) ...	274	6	...
Workshops (including Workshop Laundries)...	597	24	...
Workplaces (other than Outworkers' premises included in Part 3 of this Report)	298	...	...
Total	1169	30	...

2. DEFECTS FOUND.

Particulars	Number of Defects			Number of Prosecutions
	Found	Remedied	Referred to H.M. Inspector	
Nuisances under the Public Health Acts :—				
Want of cleanliness	13	13	...	...
Want of ventilation	1	...	...	...
Overcrowding...	2	2	...	...
Want of drainage of floor	8	8	...	...
Other nuisances	45	44	...	...
Sanitary accommodation { insufficient ..	14	17	...	...
Sanitary accommodation { unsuitable or defective ...	27	28	...	...
Sanitary accommodation { not separate for sexes ...	6	5	...	...
Offences under the Factory and Workshop Act :—				
Illegal occupation of underground bakehouse (s. 101)	...	...	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100)	5	7	...	...
Other offences (excluding offences relating to outwork which are included in Part 3 of this Report)	...	...	...	...
Total	121	124	...	...

FACTORY AND WORKSHOP INSPECTION.—3. HOME WORK.

		Number of Lists	Number of Outwork'rs
List of Outworkers (s. 107) :—			
Lists received twice in the year		34	254
List received once in the year		I	I
Address of outworkers	forwarded to other Authorities ...	10	
	received from other Authorities ...	...	
Inspection of outworkers' premises		126	
Home work in unwholesome or infected premises :—		Wearing Apparel	Other
Notices prohibiting home work in unwholesome premises (s. 108)		...	...
Cases of infectious disease notified in home workers' premises		...	...
Orders prohibiting home work in infected premises (s. 110)		...	...

4. REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) *at the end of the year* :—		Number
Important classes of workshops, such as workshop bakehouses may be enumerated here.	Bakehouses, including underground ...	271
	Other Workshops	710
Total number of Workshops on Register		981

5. OTHER MATTERS.

Class		Number
Matters notified to H.M. Inspector of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		...
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5) ...	Notified by H.M. Inspector	29
	Reports (of action taken) sent to H.M. Inspector...	36
Other (Fire Escapes)		2
Underground Bakehouses (s. 101) :—		
Certificates granted during the year		...
In use at the end of the year		22

Workshops and Workplaces.

3 complaints were received from the Factory Inspector referring to unsuitable closet accommodation, illegal occupation of an underground bakehouse, and an unventilated gas stove.

The number and character of trades in registered workshops are:—

Trade.	No. in Trade.	Trade.	No. in Trade
Bakers	271	Leather Dealers	5
Dressmakers, Drapers, &c.	128	Brush Makers	5
Boot and Clog Makers and Repairers	117	Ironmongers	5
Tailors	62	Wheelwrights	5
Milliners	60	Funeral Furnishers	4
Cabinet Makers	23	Skip Makers	4
Joiners, etc.	22	Sign Writers	4
Tinplate Workers	19	Umbrella Makers	4
Plumbers	17	Picture Framers	4
Ice Cream Manufacturers	16	BeddingManufacturers	3
Cotton-waste Dealers	13	Bookbinders	3
Saddlers	12	Coach Builders	3
Underclothing Makers	12	Drysalters	3
Printers	11	Paper Dealers	3
Stocking Knitters	9	Provision Merchants	3
General Smiths	9	Scale Makers	3
Watch and Clock Makers	9	Tarpaulin Manufacturers	3
Laundries	7	Tripe Works	3
Coopers, etc.	7	Window Blind Makers	3
Horse-shoeing	7	Chemical Works	2
Sugar Boilers	6	Clog Iron Makers	2
Cycle Makers	6	Masons	2
Rag Sorters	6	Rope Makers	2
Chemists	5	Miscellanous Trades	49

Bakehouses.

At the end of the year there were 271 bakehouses on the register, of which 22 were underground and certified in accordance with Section 99 of the Factory and Workshop Act. One underground bakehouse was closed during the year.

The ward distribution of the underground bakehouses is as follows :—Halliwell, 2 ; Bradford, 5 ; Derby, 3 ; East, 3 ; Church, 4 ; North, 1 ; Exchange, 3 ; and Smithills, 1.

Offensive Trades and Slaughterhouses.

16 of the slaughterhouses in Bradford Ward as shewn in the following table are in one building constituting the Abattoirs belonging to the Markets Committee of the Bolton Corporation.

TABLE IV.

OFFENSIVE TRADES AND SLAUGHTERHOUSES.

Trade.	Added Area.	West.	Halliwell.	Bradford.	Derby.	East.	Church.	North.	Rumworth.	Exchange.	Total.
Tripe Boilers	1	...	...	3	...	...	2	...	...	...	6
Fellmongers and Tanners ...	...	1	...	1	...	...	...	...	...	...	2
Hide and Skin Depots ...	...	...	...	...	...	1	...	...	...	1	2
Gut Scraping	...	...	...	1	...	...	...	...	...	...	1
Blood Boiler	...	...	...	...	...	...	1	...	...	...	1
Tallow Melter	...	...	...	...	...	...	...	...	...	1	1
Soap Works	1	...	...	...	...	...	...	...	...	...	1
Chemical Works	...	...	...	...	...	1	1	...	...	...	2
Muriatic Acid Works ...	1	...	...	...	...	...	...	...	...	...	1
Tar and Ammoniated Sulphate Works...	1	...	...	...	...	...	...	...	...	...	1
Brick Works	6	...	1	...	...	...	...	...	1	...	8
Knackers' Yard	...	...	...	...	...	...	1	...	...	...	1
Total Offensive Trades ...	10	1	1	5	...	2	5	...	1	2	27
Slaughterhouses	9	4	3	20	2	2	2	1	1	5	49
Total	19	5	4	25	2	4	7	1	2	7	76

Smoke Abatement.

During the year 1913 there have been 675 observations taken, 23 nuisances reported, 18 notices served to abate, 3 warnings given, and in 2 cases no action was taken as alterations to the boilers were in hand with a view to the abatement of the smoke nuisance.

TABLE V.

CHIMNEYS UNDER OBSERVATION, ARRANGED IN CLASSES, 1913.

Class.		Districts.						Total
		1	2	3	4	5	6	
1	No. of chimneys that have emitted practically no black smoke in ½ hour's observation ...	8	5	7	15	10	16	61
2	No. of chimneys that have emitted under 1 minute of black smoke in ½ hour's observation ...	9	9	9	7	43	19	96
3	No. of chimneys that have emitted 1 minute but less than 2 minutes of black smoke in ½ hour's observation	17	22	3	12	5	24	83
4	No. of chimneys that have emitted 2 or more minutes of black smoke in ½ hour's observation ...	4	4	6	3	2	4	23
	TOTAL	38	40	25	37	60	63	263

TABLE VI.

High Street Baths—Number and Class of Bathers, 1913.

Month.	No. of Weeks	Swimming Baths.			Slipper Baths.		Needle Baths.	Vapour Baths.	Season Ticket Holders.	School Children (Free).	Police. (Free).	Total	Corresponding period last year.
		at 3d.	at 2d.	at 1d.	at 6d.	at 4d.							
January	5	311	502	487	77	117	8	23	220	...	93	1838	1475
February	4	337	536	507	55	97	7	25	168	...	52	1784	1348
March	4	270	649	631	68	111	9	38	208	...	89	2073	1785
April	5	722	1072	1359	109	175	16	45	256	...	104	3858	1437
May	4	1010	1355	1705	122	200	11	33	208	94	92	4830	5314
June	4	1327	1911	2520	162	224	12	46	206	188	90	6636	5717
July	5	1576	1763	2454	302	388	22	53	258	164	88	7068	8339
August	4	1850	2060	2847	169	206	17	40	220	177	70	7656	6112
September	4	1296	1519	2536	156	199	16	34	188	167	92	6203	4797
October	4	764	1074	1653	96	131	10	32	200	86	78	4124	3279
November	5	666	842	1185	76	128	15	36	252	...	84	3284	2674
December	4	376	757	734	54	101	9	27	314	...	145	2517	1606
Total	52	10505	14040	18618	1446	2077	152	432	2698	876	1077	51921	43883

TABLE VII.

TURKISH BATHS.—NUMBER AND CLASS OF BATHERS, 1913.

Month	No. of Weeks	Massage	Books of Tickets		Cash Tickets		Slipper Baths		Medicated Baths	Total	Corresponding period last year
			1st Class	2nd Class	1st Class	2nd Class	1st Class	2nd Class			
January ...	5	45	48	30	119	95	7	7	4	355	370
February..	4	26	36	31	108	100	4	10	5	320	278
March ...	4	29	33	28	108	113	4	7	1	323	312
April ...	5	37	34	32	156	128	8	10	37	442	399
May ...	4	39	36	25	124	110	5	5	3	347	346
June ...	4	30	29	23	113	98	4	2	6	305	292
July ..	5	33	21	21	72	86	6	6	6	251	316
August ...	4	33	37	23	102	87	7	1	14	304	291
September	4	13	36	26	99	89	5	9	3	280	270
October ...	4	36	40	25	87	115	4	8	2	317	325
November.	5	40	41	26	114	140	8	8	10	387	431
December.	4	12	40	32	95	88	4	7	6	284	475
Total ...	52	373	431	322	1297	1249	66	80	97	3915	4105

SECTION VI.

Medical Inspection of Schools

AND

School Children.

Extracts from the Circulars of the Board of Education as to Annual Reports of School Medical Officers.

" The Annual Report should be made by the School Medical Officer to the Local Education Authority, who will send six copies to the Board of Education."

" Where the Medical Officer of Health is also School Medical Officer, it may be convenient that the Annual Report which he is required to make in the latter capacity should be issued together with his Annual Report on the health of the district."

" The scope of the Report should cover, as much as possible, the ground indicated under the following heads :—Hygienic conditions in schools, corelation of school and public health service, organisation and supervision of medical inspection, extent and scope of medical inspection, facts disclosed by medical inspection, home circumstances of children inspected, treatment of defects, special schools, teaching of hygiene, open-air schools."

GENTLEMEN,

The report for 1913 does not differ in any material respect from those of previous years.

It summarizes the work of the Medical Inspection Staff, and the scope and arrangement are in accordance with the suggestions of the Board of Education.

The actual medical inspection has been carried out by the Assistant School Medical Officer and the School Nurses.

As heretofore, the arrangements have worked satisfactorily, and there has been cordial co-operation between the Medical Inspection, Public Health, and the Education Staffs.

I am much indebted to the staff for their help in the preparation of the report, and to Dr. Moffatt for the facts disclosed by Medical Inspection.

I am,

Yours obediently,

JOHN E. GOULD,

School Medical Officer.

To the Chairman and Members,

Medical Inspection Sub-Committee.

General Information.

For the middle of 1913 the population of Bolton was estimated to be 183,879, on an area of 15,283 acres. The rateable value was £852,553, and the Education Rate for 1912-13 was 1s. 6·89d. in the £. The cost of medical inspection for the same period was £630 8s. 6d , or one-fifth of a penny in the £, or 5·8d. per child in average attendance.

ELEMENTARY SCHOOLS.	1912.	1913.
Voluntary Schools	37	36
Departments	67	65
Council Schools	20	21
Departments	39	42
Special Schools	4	4
ACCOMMODATION.		
Voluntary Schools	18230	17243
Council Schools	17399	18674
Special Schools	396	396
Total Accommodation	36025	36313
Average on rolls (including half-timers)	29777	30092
Average in attendance (inc. half-timers)	25843	25979
Per cent. attending (including half-timers)	86·8	88·4
Half-Timers on Rolls	... ..	1657
Under 5 on rolls	2706	2884
Under 5, average attendance	1625	1703
Per cent. attending	60·1	59·0

SUMMARY OF WORK DONE.

1.	Total children examined—		7514
	(*a*) Entrants	2849	
	(*b*) Leavers	2665	
	(*c*) Specials at School	1071	
	(*d*) Specials at Clinic	929	
2.	Referred for further examination from those examined at school		465
3.	Total examinations		10402
	(*a*) Examinations at School	6585	
	(*b*) Re-examinations at School	964	
	(*c*) Examinations at Clinic	2853	

AGE AND SEX DISTRIBUTION OF CHILDREN EXAMINED (ENTRANTS AND LEAVERS).

Age.	Boys.	Girls.	Age.	Boys.	Girls.
3—4	224	199	9—10	3	1
4—5	399	378	10—11	7	7
5—6	667	661	11—12	231	210
6—7	120	127	12—13	995	1113
7—8	34	33	13—14	39	59
8—9	5	2	14—15	...	...
Total Infants	1449	1400	Mixed	1275	1390

CLASSIFIED LIST OF DEFECTS NOTIFIED TO PARENTS FOR TREATMENT AMONGST ENTRANTS AND LEAVERS NUMBERING 5514.

	No.	%
Clothing	30	·54
Footgear	5	·09
Uncleanliness of Head		
Boys	40	1·46
Girls	1351	48·42
Adenoids and Enl. of Tonsils	390	7·07
Teeth, diseases of	35	·63
Ear Disease	69	1·25
Defective Vision (Notified out of 2665)	307	11·51
Tuberculosis of Lung	9	·16
Suspected Tuberculosis of Lung	53	·96
Rickets	10	·18
Defective Speech	1	·01
Heart Diseases	35	·63
Nervous Diseases	5	·09
Pyrexia	4	·07
Infectious Diseases	38	·68
Anæmia and General Debility	29	·52

Sanitation in Schools.

It is satisfactory to be able to report that progress is being made on the right lines with regard to school sanitation, and especially in school construction. For the back-to-back classrooms which obtained for many years, are being substituted the pavilion type of school with cross ventilation, properly arranged desks, ample light, and classes entirely separate. What will especially be a boon to the rising generation, also, is the provision of a large and well-paved playground. This lead will, I feel sure, be followed in all future schools, for the type only wants to be seen to be appreciated. It is impossible, even with great expense, to bring the old schools up to the standard of the new type, but much can be done, especially in the way of cross ventilation.

In previous reports I have referred in some detail to the sanitary conveniences, lighting, heating, school playgrounds, desks, and seats. In all these matters improvements are being effected.

The improved painting and decorating of the schools at more frequent intervals is especially noticeable and beneficial.

In view of the interest now being taken in the treatment of tuberculosis I venture to again refer to the importance of ventilation, especially of through ventilation. I cannot do better than quote from the Board of Education's Suggestions to Teachers:—" No matter how complete the arrangements for the continuous ventilation of a classroom may be, the scholars should leave the room at least once during each meeting, and the doors and windows should be thrown wide open,' and, may I add, should be kept open for as long a period as it is possible to do so.

The following improvements, coming under the cognizance of the Public Health Authority, have been effected during the year:—Improved sanitary convenience, 1; urinals repaired, 2; improved ventilation, 1; improved heating, 2; improved yard surface, 3; drains reconstructed, 1.

A few defects were found, for which notices were sent to the Managers.

Prevention of Infectious Disease.

The biennial epidemic of measles proved more severe than it had been for the last ten years, and the number of deaths (85) was the highest since 1907. Eighteen infants' departments and two schools were closed on account of measles, one infants' department for measles and chicken-pox, and one for whooping cough. Whooping cough was rather more prevalent than in 1912, but not much above the average for the last five years. The notified and other infectious diseases amongst school children were the lowest yet recorded. There is cordial co-operation between the teachers, attendance officers, and the Public Health staff. Many of the cases were discovered by the School Medical Inspector during his ordinary visits to schools.

Organisation of Medical Inspection.

No alteration has taken place in the staff engaged, which is as follows :—

School Medical Officer... ...	MEDICAL OFFICER OF HEALTH.
Asst. School Medical Officer ...	C. W. PAGET MOFFATT, M.A., M.B., D.P.H.
School Nurses	MISS HUGHES, 3 years' cert. MISS JONES, 3 years' cert., C.M.B.
Clerk	JAMES SMITH.

The work is carried out under the supervision of the Medical Officer of Health.

Satisfactory arrangements have been made at the schools, with a minimum of disturbance of the ordinary routine.

An inspection clinic has been held at the Public Health Office on three days of the week.

The Sanitary Inspectors report as to structural defects and infectious disease in schools, and the teachers and attendance officers gave every assistance.

Facts disclosed by Medical Inspection.

(C. W. Paget Moffatt, M.A., M.B.)

A steady increase in the interest taken by parents in the examination of their children has been distinctly one of the features of medical work in the Bolton schools during the past year.

This increased interest has shown itself in an increase in the number of parents attending the examination of their children at the schools, and in a greater readiness on their part to secure for their children, as far as they can, the treatment recommended.

The sporadic cases of objection to inspection have been fewer than ever. Parents have realised that the school doctor has come to help them, and not as a scientific refinement in the cruelties of that terrible institution still known to them as the "School Board."

There appears to be a good prospect of effective provision being made in the near future for children of school age suffering from pulmonary and other forms of tuberculosis.

I have recommended, and I still recommend, a school clinic for the treatment of ringworm, running ears, sore eyes, sore and verminous heads, and some skin diseases. These are all conditions which have hitherto been left practically untreated.

Some provision for the treatment of ringworm is really urgent. The futile supervision of these cases, for most of which no proper treatment is obtained, is most disheartening.

Not all cases of ringworm need X ray treatment, but all need some treatment systematically and skilfully applied; and for some cases the only effective treatment is X rays. To show what the X ray treatment of ringworm means, I give the following particulars of the work done at the Bradford clinic during 1912:

Total number of cases of ringworm treated by X rays during 1912, 222.

Cases cured, 217. Cases still under observation at end of 1912, 5.

Average time between first application of X rays and return of child to school, 29 days.

Average number of attendances per child for treatment at clinic, 2·2.

Average time of treatment per child, 40·7 minutes. (This is the total time spent in treatment on all the occasions on which the child attended).

Parents who have been notified that their children's eyesight was defective, have not experienced any difficulty in procuring suitable glasses. When, and if, the agencies at present available cease to exist, it may be necessary to make some other provision.

The cleanliness, both of person and clothing, of the school children of Bolton has shown distinct improvement during the year. In several cases it has been necessary to resort to drastic measures. This has only been done when all other measures had proved useless, and the effect upon careless and neglectful parents has been very salutary. The co-operation of the N.S.P.C.C. has been most useful and cases are regularly referred to it with every confidence that they will be dealt with in a sympathetic and helpful manner.

In the matter of cleanliness comparisons between different areas are very deceptive. In Bolton the presence of any nits, however few, is noted, the condition of the heads being recorded in three classes, according to the number of nits present in the hair. In some areas the presence of a few nits, the head being otherwise clean, is disregarded.

The thanks of those engaged in the inspection of the Bolton school children are due to the Queen Street Mission, the Wilkinson Sanatorium, and the Guild of Help. How much the Queen Street Mission does for the children of Bolton is not sufficiently well known.

With the Bolton teachers the inspection staff has had, as in previous years, the most cordial relations. The co-operation of the teachers is essential to the success of the medical inspection of school children.

Examination Schedule.—As in previous years the model schedule of the Board of Education has been closely followed, the only departure from it consisting of a few additions, amongst which is a record of vaccination marks.

Presence of Parent at Inspection.—During 1913, parents have attended the medical inspection of their children in larger numbers than in any previous year. Many of them attend at great inconvenience to themselves and their families. I think it neither possible, nor very desirable to make any special effort to secure a larger attendance of parents at the routine examination. No difficulty is experienced in securing the attendance, either at the school or at the inspection clinic, of a parent whose child has been found to be in need of medical treatment. Perhaps on the card notifying the parents of the intended examination a more cordial invitation might be given. On the present card it is merely stated that parents "may be present."

By an oversight the figures showing the attendance of parents during 1912 were omitted from the report for that year. They are given below, as also those for the year 1913.

1912.

	No. Examd.	No. of Parents present.	%
Entrants ...	3825	867	22·66
Leavers ...	2469	262	10·61
Total ...	6294	1129	17·93

1913.

	No. Examd.	No. of Parents present.	%
Entrants ...	2849	1191	41·80
Leavers ...	2665	467	17·52
Total ...	5514	1658	30·06

THE SELECTION OF CHILDREN FOR EXAMINATION.

The groups examined have been the same as in previous years. The routine groups examined are the entrant and leaver groups, the latter group consisting of the children between the ages of twelve and thirteen.

By routine groups is meant groups of children every member of which is medically examined even though there may be no reason to suspect any defect.

In addition to these routine groups a very large number of children of various ages have been examined because their health did not appear satisfactory.

All the children attending the special schools for the blind, the deaf, and the mentally defective are examined annually.

INSPECTION CLINIC.

The inspection clinic has been held, as in previous years, on Wednesday and Friday afternoons, and on Saturday morning.

The children who have attended fall into the same classes as in previous years; they are briefly such children as authorised persons (teachers, parents, attendance officers, etc.), desire to have examined, and children who attend for purposes of supervision or for a more careful examination than is possible at school, The total number of children who attended the inspection clinic during 1913 was 1,394, and the number of attendances made by such children was 2,853. Some of the children had more than one defect. The following table gives the total number of attendances of each defect and the number of cases of each defect.

SUMMARY.

No. of Children attended	1394
No. of Attendances made by such Children	2853

DISEASES OR DEFECT.	ATTENDANCES.	CHILDREN.
Skin Diseases	1141	370
Tuberculosis	683	150
Vision	425	343
Tonsils and Adenoids	195	153
Ear Diseases	93	79
Uncleanliness	90	73
Heart Diseases	51	37
Nervous Diseases	42	34
Mental Conditions	42	38
Deformities	27	21
Infectious or Contagious Diseases	21	15
Rickets	10	6
Teeth	4	4
Lung Diseases	15	11
Speech Defects	1	1
Nil	73	73
Other Conditions	215	176
	3128	1584

No part of the medical inspection of school children has been more useful or more pleasant than the inspection clinic. It is impossible to show in statistics all that has been done in the way of advice, etc. Now that it is to be combined with a treatment clinic its usefulness and interest will be much increased.

HEIGHT AND WEIGHT.—Averages for the routine groups are given below. The figures show a surprising correspondence with those of last year. I am satisfied that the physique of Bolton children is improving.

HEIGHT AND WEIGHT TABLE.

Age.	No.	Average Height		England and Wales		Average Weight		England and Wales	
		cms.	ins.	cms.	ins.	kilos	lbs.	kilos	lbs
BOYS									
3—4	199	92·0	36·2	93·5	36·8	15·0	33·0	15·4	34·0
4—5	363	97·5	38·4	97·8	38·5	16·2	35·8	16·9	37·3
5—6	633	102·1	40·2	104·1	41·0	17·3	38·2	18·1	39·9
12—13	971	135·9	53·5	139·4	54·9	31·3	69·0	34·8	76·7
13—14	39	138·4	54·5	144·5	56·9	33·4	73·7	37·5	82·6
GIRLS									
3—4	179	89·9	35·4	92·0	36·2	14·3	31·6	14·3	31·6
4—5	339	96·5	38·0	97·0	38·2	15·8	34·8	16·4	36·1
5—6	632	101·6	40·0	102·9	40·5	16·9	37·4	17·8	39·2
12—13	1079	137·4	54·1	141·2	55·6	31·8	70·1	34·7	76·4
13—14	53	141·2	55·6	146·6	57·7	33·9	74·7	39·5	87·2

NUTRITION.—The classification of the routine groups examined in 1913 has given the following classification, based on the condition of their nutrition :—

Department.	No. Exam'd.	Good.		Normal.		Below Normal		Bad.	
		No.	%	No.	%	No.	%	No.	%
Entrants. Boys	1449	73	5·0	1297	89·5	79	5·4	...	...
Girls	1400	80	5·7	1264	90·2	56	4·0	...	...
Leavers. Boys	1275	30	2·3	1177	92·3	68	5·3	...	...
Girls	1390	157	11·3	1199	86·2	34	2·4	...	...
Total...	5514	340	6·1	4937	89·5	237	4·2	...	...

This comparison is based on the condition of a healthy child, living under what may, for workers in such an industrial centre as Bolton, be considered favourable conditions. The comparison is not with an ideal child, living under ideal conditions. The former comparison is the only one of any use in considering what practical measures can be taken to improve those not up to the standard possible in their environment.

Insufficient sleep, I believe to be a frequent cause of malnutrition. I often have doubts as to the wisdom of issuing cheap tram tickets to young children late at night.

CLOTHING.

As the figures below show, the great majority of the school children of Bolton are well clad and well shod.

CLOTHING.

Department	No. Exam.	Good		Fair		Bad	Dirty.	No. with Vests.
		No.	%	No.	%			
Entrants—Boys ...	1449	1182	81·5	223	15·3	43	1	1388
Girls ...	1400	1145	81·7	224	16·0	24	7	1335
Leavers —Boys ...	1275	1140	89·4	110	8·6	25	...	1222
Girls ...	1390	1241	89·2	142	10·2	7	...	1309
Total	5514	4708	85·3	699	12·6	99	8	5254

FOOTGEAR.

Department.	No. Exam.	Good		Fair		Bad.
		No.	%	No.	%	
Entrants—Boys ...	1449	1316	90·8	57	3·9	76
Girls ...	1400	1270	90·7	54	3·8	76
Leavers — Boys ...	1275	1186	93·0	42	3·2	47
Girls ...	1390	1331	95·7	30	2·1	29
Total	5514	5103	92·5	183	3·3	228

During the past year the Queen Street Mission has supplied 1,124 pairs of clogs to Bolton children.

It is rare to find a child badly neglected in the matter of clothing without also discovering that the condition is due to the vice of the parents.

Every teacher in Bolton is of opinion, that, since medical inspection of school children began, there has been a striking improvement in the condition of the school children, as regards cleanliness and clothing.

CLEANLINESS.

Strenuous efforts have been made throughout the year to raise the standard of cleanliness amongst the scholars of the Bolton schools.

The cleanliness of a school child must be judged by the head The body can be cleansed at short notice ; but not the head.

There is a distinct improvement this year. Of the girls in the entrant group, 56·2 per cent. were found to have clean heads. Of the leavers, 42·9 per cent. The corresponding figures for 1912 were 44·9 per cent. and 38·6 per cent.

The condition of the head is noted as 1, 2, or 3, according to the number of nits present, 3 being the worst class. It will be seen that 231 girls and 2 boys had very dirty heads.

Cases of uncleanliness in school children, when reported to the inspection staff, receive immediate attention. The list of exclusion notices, given below, shows that during the year, 174 children were excluded for various conditions of uncleanliness. Most of these cases attended several times at the Health Office, and were seen by the nurses. They are not included in the numbers given under the inspection clinic.

HEADS.

Department	No. Exam.	Clean		Fairly Clean & Nits	Dirty & Nits			Verm.	Sores.	Ring-worms
		No.	%		1	2	3			
Entrants—Boys	1449	1376	94 9	24	29	1	2	2	6	9
Girls	1400	787	56·2	3	254	205	129	6	11	5
Leavers —Boys	1275	1248	97·8	7	19	...	...	...	1	...
Girls	1390	597	42·9	...	482	196	102	6	6	1
Total	5514	4008	72·6	34	784	402	233	14	24	15

BODIES.

Department.	No. Exmd.	Clean.		Clean and Fleas.	Somewhat Dirty.	Very Dirty.	Verminous.	Sores.	Ringworms.
		No.	%						
Entrants—Boys	1449	1295	89·3	66	65	8	12	1	2
Girls	1400	1276	91·1	69	36	3	13	...	3
Leavers— Boys	1275	1133	88·8	59	67	9	6	...	1
Girls	1390	1268	91·2	81	30	1	9	...	1
Total	5514	4972	90·1	275	198	21	40	1	7

RINGWORM.

Ringworm was discussed at some length in last year's report.

The appended tables show the prevalence of the disease in Bolton school children during the year 1913.

It may be useful to state here that, from the point of view of treatment, ringworm of the scalp and ringworm of the body are two very different matters.

Ringworm of the body is easily curable in a very short time and it is never treated by X rays.

Age and Sex Distribution of Ringworm Cases, 1913.

Age	Boys.		Girls.		
	Scalp.	Body.	Scalp.	Body.	Total.
3	4	...	2	...	6
4	7	1	6	2	16
5	23	10	22	5	60
6	32	16	18	15	81
7	29	9	16	5	59
8	17	9	15	10	51
9	13	7	10	6	36
10	12	11	6	5	34
11	9	4	3	8	24
12	8	3	6	5	22
13	...	2	1	1	4
14	...	...	...	...	...
Total...	154	72	105	62	393

Age and Sex Distribution of Ringworm Cases, absent from School on Dec. 31st, 1913.

Age.	Boys.		Girls.		
	Scalp.	Body.	Scalp.	Body.	Total.
3	3	...	...	...	3
4	4	1	3	1	9
5	4	2	6	1	13
6	5	2	8	3	18
7	6	1	3	...	10
8	6	1	4	...	11
9	6	1	3	...	10
10	2	3	1	...	6
11	3	...	...	...	3
12	2	...	1	...	3
13	...	...	...	...	...
14	...	...	...	...	...
Total...	41	11	29	5	86

The routine treatment of *all* cases of ringworm of the scalp by X rays is in my opinion not desirable ; and I am quite certain that in Bolton it would not be possible.

ENLARGED TONSILS AND ADENOIDS.

The following tables show the condition found in the entrant and leaver groups.

Age.	BOYS.			GIRLS.		
	Tonsils.	Tons. and Adens.	Adenoids.	Tonsils.	Tons. and Adens.	Adenoids.
3	26	11	5	21	5	4
4	41	27	12	54	13	6
5	74	34	24	57	21	22
6	10	4	4	16	8	2
7	1	3	1	1	2	3
8	...	1	...	...	...	...
9	...	...	...	...	...	...
10	...	2	...	2	...	...
11	18	6	12	15	2	1
12	75	14	17	94	9	15
13	2	2	...	7	...	1
14	...	...	...	...	...	...

Department.		No. Exam.	Tonsils.		Adenoids.	
			No.	%	No.	%
Entrants.	Boys... ...	1449	232	16·0	126	8.6
	Girls... ...	1400	198	14·1	86	6·1
Leavers.	Boys... ...	1275	119	9·3	53	4·1
	Girls... ...	1390	129	9·2	28	2·0
	Total	5514	678	12·2	293	5·3

	Enlarged Tonsils.	Adenoids.
Boys	12·8	6·5
Girls	11·7	4·0

Only such cases of enlarged tonsils and adenoids were notified as did not appear to admit of any difference of medical opinion as to the advisability of operative treatment.

Glandular Enlargement.

In the following tables A means palpable, B, about the size of a haricot bean, and C, much enlarged.

In glandular enlargements what is of importance is to find the cause and, if possible, remove it. It is now known that chronically enlarged glands fall an easy prey to the tubercle bacillus.

Glandular Enlargement.

Department.		No. Exmd.	Submaxillary			Cervical.		
			A	B	C	A	B	C
Entrants.	Boys	1449	944	471	34	1431	18	...
	Girls	1400	1022	358	20	1368	29	3
Leavers.	Boys	1275	926	338	11	1268	6	1
	Girls	1390	1069	305	16	1381	9	...
	Total ...	5514	3961	1472	81	5448	62	4

Submaxillary Glands.

	A	B	C
Entrants ...	69·0% ...	29·0% ...	1·8%
Leavers ...	74·8% ...	24·1% ...	1·0%

Cervical Glands

	A	B	C
Entrants ...	98·2% ...	1·6% ...	0·1%

Teeth.

1913 has revealed nothing new concerning the teeth of school children.

The condition of children's teeth throughout the country is now very accurately known. The causes of dental decay are still somewhat obscure. The advantages of skilled dental treatment are beyond dispute.

In the following table the teeth are classified as: sound, less than four teeth decayed, four or more teeth decayed.

Teeth.

Department.		No. Exam'd.	Sound.		− 4		+ 4	
			No.	%	No.	%	No.	%
Entrants.	Boys	1449	631	43·5	363	25·0	455	31·4
	Girls	1400	631	45·0	386	27·5	383	27·3
Leavers.	Boys	1275	265	20·7	663	52·0	347	27·2
	Girls	1390	363	26·1	722	51·9	305	21·9
	Total ...	5514	1890	34·2	2134	38·7	1490	27·0

Vision.

The methods of examination, and the results of such examination, have been much the same as in previous years.

Not less than 10 per cent. of school children are in need of glasses.

Everything possible should be done to avoid undue strain on the eyes of growing children. The following points have suggested themselves to me:—

It should be possible to arrange the school time table in such a manner that no work involving reading and writing would be done by artificial light.

A stricter supervision of the type of the books read in school must be maintained. I have seen classes reading sixpenny magazines, papers, etc., which they had been asked to bring with them.

Books from school libraries should not be issued to the younger children. The library book must not take the place vacated by home lessons.

The prejudice against glasses has diminished wonderfully in the last few years. Expense is now the chief obstacle.

Routine examination of the sight is only undertaken in the case of children over the age of six.

The following table shows the condition of the sight in each eye of the 1,275 boys and 1,390 girls examined in the routine group.

RIGHT EYE.

LEFT EYE.	BOYS								GIRLS.							
	+6	6	9	12	18	24	36	60	+6	6	9	12	18	24	36	60
+6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	...	652	96	11	2	1	...	4	...	609	77	5	...	2	1	2
9	...	62	212	22	10	2	2	1	...	90	303	20	9	2	3	...
12	...	9	19	30	15	2	1	1	...	8	24	25	18	4	1	...
18	...	3	5	12	41	3	...	3	...	4	12	12	67	6	5	2
24	...	2	2	2	4	12	3	...	...	2	4	6	11	22	2	1
36	...	1	3	1	1	2	4	2	...	2	4	...	5	4	4	1
60	...	2	4	1	1	...	...	7	...	...	4	...	1	...	3	3
0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	...	731	341	79	74	22	10	18	...	715	428	68	111	40	19	9

TOTAL ... 1275 TOTAL ... 1390

+6 means vision more acute than normal.

From the above table we get the following facts :—

Of the boys, 652 or 51·13% had normal sight, or sight better than normal.

Of the girls, 609, or 43·81% had normal sight, or sight better than normal.

	Boys.	Girls.
Vision defective, but not worse than $\frac{6}{12}$ in the worst eye	36·15%	39·71%
Vision $\frac{6}{18}$, or worse in the worst eye	12·70%	16·47%
Equal vision in each eye	75·13%	74·31%
Better vision in right eye than in left	10·66%	14·10%
Better vision in left eye than in right	14·19%	11·58%

Eye Diseases.

The following cases were found:—

Blepharitis, 38; Corneal Opacities, 16; Corneal Ulcers, 3; Conjunctivitis, 11; Ptosis of Eyelid, 3; Pterygium, 1; Interstitial Keratitis, 1: Traumatic Iriti, 1.

For many of the cases, there is, at the time of writing, no proper treatment available anywhere.

Ear Disease.

It is important to remember that the figures given in the following table refer only to children in the routine, that is, to children whose defect would probably not have been noticed but for the routine examination.

The detection of a moderate degree of deafness in young children is extremely difficult.

Deafness and Otorrhœa in children is mainly a question of Adenoids.

In the table below S means somewhat deaf, and V means very deaf.

Ear Disease.

Department.	No. Exam'd.	Otorrhœa Active.		Latent	Wax in Ears.	Deaf.		
		No.	%			S.	V.	%
Entrants. Boys	1449	11	0·7	16	1	23	2	1·7
Girls	1400	17	1·2	18	8	26	3	2·0
Leavers, Boys	1275	6	0·4	8	7	31	9	3·1
Girls	1390	9	0·6	11	3	25	13	2·7
Total ...	5514	43	0·7	53	19	105	27	2·3

Heart Disease.

The table shows the number of cases of organic heart disease found in the routine groups examined.

	No. Examined.	Cases of Organic Heart Disease.	Percentage.
Entrants.			
Boys	1449	7	·48
Girls	1400	9	·64
Leavers.			
Boys	1275	7	·54
Girls	1390	17	1·22

22 cases of organic heart disease were found amongst the special cases examined.

Rheumatism is the chief cause. The parents are, in most cases, unaware of the presence of any physical defect.

Medical inspection is making parents more and more alive to the importance of treating seriously sore throats and so-called "growing pains."

Diseases of the Lungs

Pulmonary Tuberculosis is dealt with in a separate section.

The following conditions were noted :—Chronic bronchitis, 33 cases ; bronchial asthma, 3 cases ; collapsed lung (after empyema), 1 case.

Pulmonary Tuberculosis.

During the year 1913 the medical inspection staff made a diagnosis of pulmonary tuberculosis in 38 school children. The age and sex distribution of these cases is as follows :—

Age.	Boys.	Girls.
3	...	1
4	...	...
5	1	1
6	4	8
7	2	...
8	2	1
9	3	2
10	1	2
11	...	1
12	3	6
13	...	...
14	...	...
	16	22

At the present moment 31 children are excluded from school on account of pulmonary tuberculosis.

53 boys and 43 girls were noted during the year as being possible cases of incipient phthisis.

All these cases were kept under observation at the Inspection Clinic, and all that was possible was done for them.

The home has been visited in every case, and advice given as to ventilation, etc.

Other Tuberculosis.

Tubercular glands, 28 cases; tubercular disease of humerus, 1; tubercular hip disease, 7; tubercular ankle, 1; tubercular peritonitis, 1; tubercular elbow, 1; tubercular dactylitis, 1.

Diseases of the Nervous System.

The following conditions were found:—Infantile paralysis, 16; post-diphtheritic paraylsis, 1; epilepsy, 6; chorea, 1; hemicrania, 2. These figures refer only to the routine groups.

Skin Diseases.

Skin diseases, other than ringworm and impetigo, are rare. Ringworm is dealt with in a separate paragragh.

The following cases were dealt with:—Impetigo, 20; psoriasis, 5; xerodermia, 5; eczema, 8; pityriasis versicolor, 1; scabies, 1; urticaria papulosa, 1; varicella, 1.

Cases of some of the above conditions, if of trifling extent, are not recorded.

Deformities.

Ricketty deformities of legs, 40; cleft palate, 2; syndactyly, 1; undescended testicle, 1; congenital dislocation of hip, 1; congenital deformity of hand, 1: inguinal hernia, 2; lateral curvature, 1; deflected septum, 7.

Deformities due to paralysis are not noted here.

Several cases of loss, or partial loss of limbs, are met with every year.

RICKETS.

The following table shows the ricketty deformities found amongst entrants and leavers, and of such a degree as to make it advisable to draw attention to them.

RICKETS.

Department.	No. Exmd.	Head.	Chest.	Legs.	Arms.	Total.	
						No.	%
Entrants, Boys	1449	...	2	20	...	22	1·5
Girls	1400	...	2	18	...	20	1·4
Leavers, Boys	1275	...	...	2	...	2	0·1
Girls	1390	...	...	...	...	...	...
Total ...	5514	...	. 4	40	...	44	0·7

SPEECH DEFECTS.

Defective articulation, 15; stammering, 11.

Speech defects are not common, and most of the cases improve at the ordinary school.

VACCINATION.

A record is kept of the children as regards vaccination. No advice whatever is given on the subject.

In the following table such children as were stated not to have been vaccinated at all, and such children, as, though said to have been vaccinated, showed no marks of vaccination, are all placed in the column 0.

Department.		No. of Marks.										
		1	2	3	4	5	6	7	8	9	10	0
Entrants.	Boys	163	286	121	621	1	...	...	...	...	...	257
	Girls	153	271	138	541	...	...	...	...	...	...	297
Leavers	Boys	159	325	139	516	2	...	...	...	...	...	134
	Girls	170	395	187	519	1	...	...	...	...	...	118
Total		645	1277	585	2197	4	...	...	...	...	...	806

From this table it appears that 14·6 per cent. of the children in the routine groups show no evidence of vaccination. Amongst the entrants, the percentage is 20.

Special Cases.

There are children, not belonging to the routine groups of entrants and leavers, who are specially examined on the occasion of the doctor's visits to the schools. They come before the doctor in various ways: presented by the head teacher, examined at the request of the parents, picked out by the doctor and nurses, etc.

913 children were examined in this way in 1913. Defects in 829 of these children were notified to the parents, and 91 special cases were excluded from school.

The following table shows the defects found in the children :—

Conditions Found in Special Cases :

Phthisis, and suspected phthisis	17
Enlarged tonsils and adenoids	130
Tuberculosis other than pulmonary	10
Bronchitis	2
Defective vision	397
Eye diseases	37

Ear diseases and deafness	8
Ricketty deformities...	7
Other deformities	3
Heart diseases	13
Nervous diseases	13
Ringworm	18
Infectious diseases	13
Miscellaneous defects	68
Verminous Conditions	22
Nits	41
Dirty and Ragged Clothing...	30
	829

OTHER DISEASES OR DEFECTS.

Anæmia, 51 ; general debility, 32 ; nephritis, 3 ; acute laryngitis, 1 ; acute tonsillitis, 5 ; sub-acute rheumatism, 3 ; pneumonia, 1 ; specific ulceration, 1 ; congenital syphilis, 2 ; rectal hæmorrhage, 1 ; epispadias, 1 ; chronic mastitis, 1 ; lupus, 2.

RE-EXAMINATIONS.

All the entrants of 1913 suffering from defects of such a nature as to require notification to the parents, were re-examined during 1913, with the exception of such children as were absent at the time of re-examination.

The following table shows the results found at this re-examination.

The re-examination of leavers presents considerable difficulties. The age for this group is 12-13. Practically all children in the Bolton elementary schools leave school at 13, and a large number begin half-time attendance at the age of 12. Re-examination of these children is extremely difficult. So long as half-time labour continues, and 13 remains the age for leaving school, it would be better in Bolton and similar areas to make the age of 10 to 11 the leaver group.

TABLE SHOWING TREATMENT OBTAINED BY ENTRANTS HAVING NOTIFIED DEFECTS.

Disease or Defect.	No. Notfd.	Under Trtmt.	Had Trtmt.	Impvd.	Cured.	Nothing Done.	Absent or Left.
Nutrition	...	...	...	...	...	...	...
Clothing	25	...	...	10	3	7	5
Footgear	4	...	...	2	...	1	1
Uncleanliness of Head							
Boys	25	...	...	8	8	5	4
Girls	583	...	...	34	111	160	178
Teeth Diseases	26	2	...	1	9	9	5
Ear Diseases	19	3	2	1	8	1	4
Heart Diseases...	11	1	1	3	...	...	6
Nervous Diseases	2	...	...	...	1	...	1
Lung Diseases...	11	2	...	3	1	1	4
Skin Diseases	6	...	...	1	5	...	...
Infectious Diseases	24	4	...	...	13	...	7
Pyrexia	3	...	...	...	1	1	1
Defective Vision	98	8	23	4	8	28	27
Defective Speech	...	...	...	...	...	...	...
Rickets	9	1	...	3	...	2	3
Deformities	7	2	2	2	...	...	1
Mentally Defective and Imbecile	6	...	...	...	...	3	3
Anæmia & Gen. Deb. ...	6	...	2	4	...	...	...
Tuberculosis of the Lung . .	5	2	...	1	...	...	2
Suspected Tubercul. of the Lung	35	8	4	12	1	2	8
Other Tuberculosis	3	1	...	1	...	...	1
Verminous Conditions ...	36	...	...	11	7	12	6
Other Diseases or Defects ...	10	1	3	...	4	...	2

	No. Notfd.	Under Trtmt.	Had Oper.	Had Trtmt.	Nothing Done.	Absent or Left.
Tonsils...	11	4	...	2	2	3
Tonsils & Adenoids	94	24	16	11	20	23
Adenoids	66	18	11	9	20	8

EXCLUSION NOTICES.

The following list explains itself. The children excluded for defective vision were excluded as the first step in the process of compelling recalcitrant parents to obtain glasses.

Ringworm	292
Ringworm ?	2
Phthisis	95
Phthisis ?	66
Bronchitis	4
Tonsils and Adenoids	11
Tubercular Peritonitis...	6
Pott's Disease	3
Mitral Stenosis	3
Weak Heart	1
Other Heart Diseases	14
Chorea	8
Epilepsy...	4
Blepharitis	1
Conjunctivitis	4
Corneal Ulcers	3
Defective Vision	20
Acute Tonsillitis	4
Pyrexia	4
Whooping Cough	2
Scabies	10
Eczema	4
Otorrhœa	6
Mentally Defective	2
Bow Legs	5
Verminous Conditions	87
Sore Heads	58
Nits and Dirty Heads	29
Insufficient Clothing	2
Impetigo...	26
Anæmia and General Debility	19
Miscellaneous Conditions	32
Total	827

Review of the methods available for the Treatment of Defects.

The establishment in Bolton of a School Clinic for the treatment of minor defects, including ringworm, is now assured.

For the treatment of surgical tuberculosis in children, beds will now be available at the Liverpool Country Hospital for Children at Heswall.

For pulmonary tuberculosis in children, provision will be made in the near future.

The Bolton Infirmary continues to treat school children on exactly the same basis as any other patients. If the burden placed on the Infirmary is somewhat heavy it is incontrovertible evidence of the confidence inspired by the institution.

To all the agencies which have assisted us in obtaining treatment for the school children our cordial thanks are due.

The following figures will show what has been done in the way of following up, and what success has resulted in the matter of obtaining treatment.

Work accomplished:

Number of children re-examined at schools	964
Children referred for further examination at inspection clinic	1394
Nurses' visits to parents	1023
Operations performed at Bolton Infirmary	292
,, ,, by Private Doctors	66

Conditions treated by operation and otherwise :

Enlarged Tonsils & Adenoids	249
Tubercular arm	1
„ ankle	1
„ elbow	1
„ hip	1
„ peritonitis	3
„ spine	1
Ricketty legs	15
Mastoid abscess	1
Hypertrophic rhinitis	3
Sarcoma of pelvis	1
Dupuytrens contraction	1
Enlarged spleen (removed)	1
Other conditions	1
Glasses obtained	293

Treatment obtained for pulmonary tuberculosis and suspected pulmonary tuberculosis—sent to :

Southport Convalescent Home	40
Wilkinson Sanatorium	18
Borough Hospital	2
Townley Hospital	1

Of the above 3 were operated on for Adenoids.

For other conditions children were sent to :

Heswall	3
Manchester Royal Infirmary	1
Southport Convalescent Home	54
Blair's Hospital	3

Total number of cases sent to Southport, 94 (by kindness of Queen Street Mission).

Cases still under treatment :

Under medical treatment...	101
Dental treatment	2
Home treatment	79
Attending Infirmary	59
Promised treatment	285
At Bolton Infirmary	43

Blind and Deaf Children.

The Thomasson Memorial School for the Blind and the Deaf is a fine building in the best part of the town. It has accommodation for 96 scholars, and resident accommodation for 40. A gymnasium and excellent sick wards have recently been added.

There were at the close of 1913, 22 resident scholars in the school, of whom 6 are maintained by the Bolton Education Authority, and 16 by other authorities.

DEAF SCHOOL.

8 new scholars were admitted during the year and 4 left. The number of scholars in the school at the end of 1913 was 42.

The causes of deafness in these children are as follows :—

Congenital Deafness	19
Acquired Deafness	23

The causes of acquired deafness are as follows :—

Middle Ear Disease	11
Meningitis	3
Fits...	1
Traumatism	2
Internal Ear Disease of uncertain origin	6

BLIND SCHOOL.

There were on the register at the close of 1913, 28 scholars. There were 9 admissions during 1913, and 5 scholars left during the same period.

The causes of blindness, and partial blindness, are as follows:—

Ophthalmia Neonatorum	16
High Myopia	2
Cataract	3
Traumatism	3
Double Dislocation of Lens	1
Measles	1
Congenital Coloboma of Iris, Lens and Retina	1
Optic Atrophy	1

The annual examination took place in January, 1914. The school is in every respect in a very satisfactory condition.

Special Schools.

There are in Bolton two special schools for mentally defective children, one in Flash Street, and one in Kay Street. They are both quite modern buildings, specially designed for the purpose for which they are used. They are very conveniently planned and the more recent of the two, Flash Street School, has 3 shower baths and 1 slipper bath.

The school doctor visits each of these schools once a month at least; and once a year every child in the schools is examined both medically and also with a view to its classification according to mental condition.

FLASH STREET SCHOOL.

There were 91 scholars on the register at the close of 1913, 60 boys and 31 girls.

33 scholars were admitted during 1913, and 26 left during the same period.

Of the 26 who left 13 went to work, 2 to Kay Street Special School, 1 to the Thomasson Memorial School, 4 removed from the town, 2 were excluded by the Medical Officer, 2 are at home, 1 has gone to an asylum, and 1 to an industrial school.

KAY STREET SCHOOL.

Number on the rolls at the close of 1913, 71. 11 scholars were admitted during 1913, and 19 left. Of the scholars who left 1 was transferred to an ordinary school, 9 went to work, 1 to Flash Street School, 5 left the town, and 3 are at home.

The accommodation at Flash Street is for 120 mentally defective scholars, and at Kay Street for 100, a total of 220 places for mentally defective children.

Extracts from Census,

1911.

Tenements and Inhabitants.

LANCASHIRE TOWNS, 1911.

	Persons per house.	Percentage tenements two rooms or less.	Percentage living more than two in in a room.
Liverpool	4·9	12·8	10·1
Manchester	4·6	5·3	7·2
Salford	4·8	5·7	10·1
BOLTON	**4·4**	**3·8**	**7·7**
Oldham	4·4	5·7	7·2
Blackburn	4·3	1·6	4·4
Preston	4·4	1·4	5·6
Burnley	4·4	7·9	9·5
Rochdale	3·9	13·4	7·0
St. Helens	5·4	3·5	17·0
Wigan	5·0	8·3	12·9
Warrington	5·0	3·3	10·6
Bury	4·2	5·5	5·6

Tenements, 1911.

LESS THAN FIVE ROOMS, AND THE NUMBER OF PERSONS LIVING IN THEM.

No. of Rooms per Tenement.	No of Families.													Total Families.	Population.
	No. in Family.														
	1	2	3	4	5	6	7	8	9	10	11	12	13		
1	89	144	49	19	5	...	1	...	1	...	...	...	...	308	641
2	249	370	251	170	123	47	32	13	5	1	...	...	...	1261	3702
3	204	819	858	730	471	335	195	107	48	20	4	...	1	3792	14611
4	620	3820	4800	4192	3231	2231	1337	878	447	204	72	26	5	21863	92584
Total	1162	5153	5958	5111	3830	2613	1565	998	501	225	76	26	6	27224	111538

	1911.	1901.
Total separate occupiers	40681	36177
Tenements with four rooms or more	35189	33619
Tenements with two rooms or less	1569	1796

Ages of Males and Females.

1911.

Age.	Males.	Females.	Both Sexes.
Under 5	9317	9217	18534
5 ,, 10	8873	8797	17670
10 ,, 15	8698	8949	17647
15 ,, 20	8556	9037	17593
20 ,, 25	7585	9292	16877
25 ,, 30	7073	8633	15706
30 ,, 35	6990	8244	15234
35 ,, 40	6480	7317	13797
40 ,, 45	5517	6321	11838
45 ,, 50	4683	5280	9963
50 ,, 55	3772	4574	8346
55 ,, 60	2931	3455	6386
60 ,, 65	2085	2544	4629
65 ,, 70	1351	1912	3263
70 ,, 75	783	1260	2043
75 ,, 80	335	587	922
80 ,, 85	104	194	298
85 ,, 90	32	56	88
90 ,, 95	2	15	17
95 ,, 100	......	......	......
	85167	95684	180851

Grouped Occupations of Males and Females, Aged 10 years and upwards,

1911.

Males.	Grouped Occupations.	Females
802	General or Local Government of the Country	72
31	Defence of the Country	...
1302	Professional Occupations and their subordinate services.........	1250
760	Domestic Offices or Services	3833
2858	Commercial Occupations	312
4652	Conveyance of Men, Goods, and Messages	84
728	Agriculture	119
2837	In and about, and working and dealing in the products of Mines and Quarries	19
11450	Metals, Machines, Implements and Conveyances	441
232	Precious Metals, Jewels, Watches, Instruments, and Games ...	38
4268	Building, and Works of Construction	3
1024	Wood, Furniture, Fittings, Decorations..............................	152
285	Brick, Cement, Pottery, and Glass	22
332	Chemicals, Oil, Grease, Soap, Resin, etc.	102
585	Skins, Leather, Hair and Feathers	35
765	Paper, Prints, Books and Stationery	377
17890	Textile Fabrics (including cotton, thread, hosiery, bleaching, dyeing, etc.)	22381
1474	Dress	2060
3611	Food, Tobacco, Drink, and Lodging	2443
746	Gas, Water, and Electricity Supply, and Sanitary Services......	1
2876	Other General and Undefined Workers and Dealers...............	376
1151	Retired (not Army or Navy) ; Pensioners	128
64	Private Means	478
6254	Others, aged 10 and upwards (including Scholars and Students)	42944
66977		77670

Males	Occupied and Unoccupied	Females
85167	All Ages	95684
18190	Under 10 Years...............	18014
66977	10 Years and Upwards......	77670

Persons returned as Totally Blind, Totally Deaf Deaf and Dumb, Lunatic, Imbecile, and Feeble-minded,

1911.

	Males	Females	Total
Totally Blind	53	64	117
Totally Deaf	36	49	85
Deaf and Dumb	29	34	63
Lunatics	3	...	3
Imbeciles	13	12	25
Feeble-Minded	41	43	84
Combined Infirmities	2	2	4

NOTE.—Persons returned as suffering from more than one infirmity are included under "combined infirmities."

The figures for the deaf and dumb include all persons stated only to be dumb.

The total number of pauper lunatics, idiots, and persons of unsound mind belonging to Bolton, on the 1st January, 1911, was 615, which is equal to 340 per 100,000 of the population.

Appendix.

TABLE

CAUSES OF

CAUSES OF DEATH.	Total.	SEX.		AGE.														
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55
General Diseases.																		
Small Pox { Vaccinated ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Small Pox { Not Vaccinated ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Small Pox { Doubtful ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever	3	2	1	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...
Diphtheria & Croup	32	15	17	3	3	4	2	6	14	...	...	...	...	...	...	...	...	...
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	16	9	7	...	1	...	...	1	2	1	...	3	1	3	2	...	1	1
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Septicæmia (not puerperal) ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyæmia (not puerperal) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	85	49	36	15	44	13	3	7	3	...	...	...	...	...	...	...	...	...
German Measles	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Whooping Cough	49	17	32	21	12	9	2	3	2	...	...	...	...	...	...	...	...	...
Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mumps	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	25	16	9	3	1	1	1	...	1	...	...	...	...	1	...	3	2	
Cholera Nostras	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malaria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rabies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glanders, Farcy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax, Splenic Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tetanus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	143	81	62	...	1	...	...	1	2	6	11	10	15	24	16	20	14	7
Acute Miliary Tuberculosis, Acute Phthisis	11	10	1	...	...	...	...	...	1	1	1	1	1	...	2	1	...	...
Tubercular Meningitis .	22	13	9	5	6	...	2	4	2	2	...	...	...	...	1	...	...	..
Tabes Mesenterica	5	4	1	4	1	...	...	...	...	...	...	...	...	...	...	...	...	..
Other Peritoneal and Intestinal Tubercle ...	20	9	11	6	3	2	...	1	...	1	2	2	1	...	1	...	...	..
Tuberculosis of Spinal Column ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Tuberculosis of Joints ...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Lupus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scrofula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of other Organs ...	4	2	2	...	1	...	...	...	1	...	...	1	...	1	...	...	...	..
General Tuberculosis ...	5	2	3	1	...	...	...	...	...	...	1	1	1	...	...	1	...	..
Rickets	6	2	4	2	3	1	...	...	...	...	...	...	...	...	...	...	...	..
Syphilis	7	5	2	5	1	...	...	...	...	...	...	...	...	...	...	...	...	..
Purulent Ophthalmia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Other Venereal Diseases ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Cancer of the Buccal Cavity ...	12	9	3	...	...	...	...	...	...	...	...	...	...	...	...	1	2	
,, ,, Stomach, Liver ...	53	22	31	...	...	...	...	...	...	...	...	...	1	..	...	1	7	
,, ,, Peritoneum, Intestines and Rectum	31	14	17	...	...	...	...	...	1	...	...	...	...	1	2	2	3	
,, ,, Female Genital Organs ...	26	...	26	...	...	...	...	...	...	...	...	1	1	1	2	2	3	
,, ,, Breast ...	18	...	18	...	...	...	...	...	...	...	...	...	...	...	...	1	3	
,, ,, Skin	7	5	2	...	...	...	...	...	...	...	...	...	...	2	2	...	...	..
,, of other Organs ...	35	22	13	...	...	1	...	...	...	...	...	1	...	2	...	3	3	
Other Tumours	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Rheumatic Fever, Acute Rheumatism ...	14	2	12	...	...	...	...	...	...	3	1	2	1	1	...	3	1	
Chronic Rheumatism Gout, Osteo-Arthritis, ...	11	4	7	...	...	...	...	...	...	...	...	...	...	1	1	2	1	
Scurvy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Diabetes	24	9	15	...	...	...	...	...	...	...	2	3	...	...	1	...	1	..
Exophthalmic Goître ...	4	...	4	...	...	...	...	...	...	...	...	...	1	...	1	...	2	..
Leucocythæmia	4	3	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	..
Anæmia, Chlorosis	24	11	13	1	...	...	...	...	...	1	...	...	...	1	3	1	4	
Purpura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Hæmophilia, Hæmorrhagic Diathesis	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	.
Alcoholism, Delirium Tremens ...	5	2	3	...	...	...	...	...	...	...	...	...	...	1	2	...	...	
Total General Diseases ...	713	345	368	66	78	32	10	23	30	16	20	26	23	39	36	41	47	

I.

DEATH, 1913.

									WARD.																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	2	1	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	18	14	1	...	2	..	7	...	4	6	1	2	1	2	1	1	1	3	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	2	14	...	1	2	...	2	2	...	1	1	1	2	2	...	...	2	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	1	...	...	1	...	...	3	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	82	3	3	9	11	2	17	2	6	14	...	2	10	5	...	1	...	3	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	47	2	3	...	9	2	13	...	4	7	...	1	4	5	...	...	1	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	4	2	...	...	...	6	19	...	...	6	2	1	...	2	4	1	...	...	3	3	...	1	2	...
1	1	1	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	6	3	1	...	...	...	2	141	4	7	23	7	24	5	9	15	6	1	11	16	3	3	3	5	1
2	1	...	...	...	...	...	...	11	...	2	1	...	2	...	...	2	...	...	1	...	...	...	...	3	...
...	...	...	...	...	...	...	17	5	1	2	3	...	2	...	3	2	...	...	3	5	...	...	...	1	...
...	...	...	...	...	...	...	5	...	...	2	1	...	...	...	...	1	...	...	1	...	...	...	...	...	...
...	...	1	...	...	...	...	12	8	...	4	5	1	1	...	...	4	...	...	...	4	...	...	...	...	1
1	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	3	...	1	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	2	1
...	...	...	...	...	...	...	6	...	...	...	...	...	...	1	...	2	1	...	...	...	...	2	...	...	...
1	...	...	.	...	...	...	6	1	...	...	...	1	2	2	1	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	2	2	2	...	...	...	...	12	...	1	2	...	1	1	...	...	1	...	2	1	...	...	2	1	...
11	7	5	6	3	...	...	...	53	1	3	10	1	10	1	1	4	1	3	3	5	1	1	3	4	1
4	5	3	2	1	...	...	...	31	2	1	7	...	3	1	3	2	1	...	2	4	...	2	1	1	1
1	3	4	4	1	...	...	...	26	1	1	4	...	2	1	...	7	...	2	1	2	1	...	2	2	...
2	3	1	3	...	...	..	...	18	...	...	2	...	2	2	1	3	2	...	1	3	...	1	...	1	...
1	1	...	...	1	...	...	...	7	...	...	...	...	...	...	1	1	...	1	...	2	...	...	1	1	...
3	7	4	1	2	1	1	1	34	...	2	7	2	3	1	3	3	2	1	1	3	1	1	3	2	...
...	1	1	...	...	...	...	...	2	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	14	...	1	3	...	3	1	2	...	1	...	1	1	...	1	...	...	...
...	2	1	1	1	...	...	...	11	...	...	2	...	2	1	2	1	1	...	...	1	...	...	1	...	...
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3	4	4	4	1	...	1	...	24	2	...	3	...	2	2	1	3	...	...	2	1	...	...	...	6	2
...	...	...	...	...	...	...	...	4	...	...	1	...	1	...	...	...	...	...	...	1	1	...	...	...	...
1	...	...	...	1	...	...	...	4	...	...	1	...	...	...	1	1	1	...	...	...	...	...	...	...	...
3	2	4	1	1	...	...	1	23	1	1	2	...	3	1	4	5	3	...	...	2	...	...	1	1	...
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1	...	...	...	...	...	...	...	5	...	2	1	...	1	...	...	...	...	...	...	1	...	...	...	...	...
47	46	39	27	12	2	2	209	504	19	43	110	19	105	24	51	89	23	14	50	73	11	14	23	38	7

CAUSES OF DEATH.	Total.	SEX.		AGE.														
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	
Nervous System and Organs of Special Sense.																		
Meningitis, Inflammation of Brain	41	23	18	14	4	4	3	2	3	3	1	...	...	1	...	1	1	..
Encephalitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Locomotor Ataxy	3	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	..
Other Diseases of Spinal Cord, Poliomyelitis	10	4	6	...	...	2	...	...	...	...	...	1	...	...	...	...	...	
Apoplexy	23	11	12	...	...	...	...	...	...	...	...	...	...	...	1	...	1	
Cerebral Congestion.. ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	..
Cerebral Hæmorrhage ...	112	38	74	...	...	1	...	...	...	...	...	1	...	2	3	5	4	
Softening of Brain	4	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Hemiplegia	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Paraplegia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Other forms of Paralysis ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
General Paralysis of Insane ...	13	11	2	...	...	...	...	...	...	...	...	...	1	1	2	4	...	
Other forms of Mental Alienation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Epilepsy	20	11	9	...	...	1	...	...	...	...	4	2	2	2	2	2	1	
Convulsions (non-puerperal; 5 years and over)	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	....
Infantile Convulsions, Teething (under 5 years ...	84	44	40	56	27	1	...	...	...	...	...	...	...	...	...	...	...	....
Chorea	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	....
Hysteria, Neuralgia, Sciatica ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Neuritis, ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	....
Cerebral Tumour	3	2	1	...	...	...	...	...	...	...	...	...	1	...	...	1	...	....
Idiocy, Imbecility	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Other Diseases of Nervous System	2	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	....
Diseases of the Eyes and Annexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Mastoid Disease	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Ears ...	3	2	1	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Total Nervous System, &c....	327	157	170	71	32	9	3	2	3	4	7	5	4	6	10	13	9	22
Circulatory System.																		
Pericarditis	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Endocarditis, Acute Myocarditis	11	2	9	...	...	...	...	1	1	1	...	1	1	1	3	...	...	1
Valvular Disease	81	29	52	1	...	...	...	...	...	4	6	2	6	2	4	7	11	1
Fatty Degeneration of Heart ...	22	12	10	...	...	...	...	...	...	...	...	...	...	...	2	...	1	3
Other Organic Disease of Heart...	67	34	33	1	...	...	...	...	1	...	...	...	1	1	1	2	7	10
Angina Pectoris	7	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aneurysm...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Arteries ...	22	13	9	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Embolism and Thrombosis ...	17	6	11	...	...	1	...	...	...	...	1	...	...	...	...	...	1	3
Diseases of the Veins, Phlebitis...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Status Lymphaticus	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Lymphatic System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hæmorrhage; other Diseases of the Circulatory System ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Circulatory System ...	232	102	130	3	...	1	...	1	2	5	7	3	8	4	11	9	20	19

									WARD.																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
2	...	2	...	...	...	...	27	14	1	3	7	3	3	2	1	4	...	2	1	9	...	...	...	5	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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1	2	1	1	...	...	...	2	8	...	1	1	...	...	...	...	1	...	...	1	3	1	...	2	...	...
2	2	5	5	1	1	...	...	23	1	5	4	...	1	2	2	2	1	...	...	...	...	...	...	5	...
...	1	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
11	25	21	16	8	5	...	1	111	6	3	11	2	19	9	11	17	3	...	2	13	1	4	5	5	1
1	2	...	1	...	...	...	...	4	...	1	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...
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...	2	...	1	...	...	...	1	19	...	...	2	...	3	2	1	...	1	...	4	3	...	...	3	1	...
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...	...	...	...	...	...	...	84	...	6	9	12	3	21	...	4	5	1	1	1	13	...	4	1	2	1
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19	35	33	25	9	6	...	117	210	15	26	41	9	50	17	21	32	6	7	10	44	3	8	15	21	2
...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
1	...	...	...	...	...	...	1	10	1	...	2	...	...	...	...	...	...	...	1	2	...	2	...	3	...
12	7	6	5	6	1	...	1	80	4	3	10	5	10	4	...	11	1	5	3	10	1	6	2	2	4
4	3	7	1	1	...	...	...	22	1	1	4	...	2	3	...	4	1	2	...	3	...	...	1	...	...
6	11	11	10	3	1	1	1	66	2	3	11	1	5	5	4	6	1	...	3	13	1	4	5	2	1
2	3	1	...	1	...	...	...	7	...	...	1	...	...	3	...	...	...	...	...	1	...	1	...	...	1
1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
1	6	7	2	3	...	1	...	22	1	1	2	1	3	...	1	3	...	1	1	5	...	...	1	1	1
...	2	5	1	3	...	...	1	16	1	1	2	...	1	...	2	...	4	...	...	2	...	1	...	2	1
...	2	...	...	...	...	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...
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27	34	37	19	17	2	3	5	227	10	9	32	7	22	15	8	25	7	8	8	36	2	15	10	10	8

TABLE

CAUSES O

CAUSES OF DEATH.	Total.	SEX.		AGE.														
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	
Respiratory System.																		
Laryngitis	9	2	7	1	...	1	2	1	2	...	...	1	...	...	...	...	...	..
Other Diseases of the Larynx ...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Diseases of the Nasal Fossæ ...	1	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	..
Bronchitis	384	178	206	41	10	2	1	...	...	...	1	1	...	2	10	10	17	
Broncho, Catarrhal and Lobular Pneumonia...	98	50	48	41	25	9	2	1	3	1	...	...	...	1	...	1	1	
Lobar and Croupous Pneumonia	49	31	18	3	1	...	...	1	3	1	3	4	3	3	8	3	6	
Pneumonia, ...	118	67	51	19	11	8	2	4	3	1	3	9	3	8	4	7	8	
Pleurisy. Empyema	17	12	5	...	2	...	...	...	1	...	...	...	...	.	3	...	1	
Pulmonary Congestion, Pulmonary Apoplexy ...	7	2	5	1	...	...	...	...	...	...	...	...	...	...	...	...	2	
Asthma	7	5	2	...	...	...	...	...	...	...	...	...	...	1	...	1	...	
Pulmonary Emphysema ..	1	1	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	..
Fibroid Disease of Lung ...	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Diseases of Respiratory System	2	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	....
Total Diseases of Respiratory System	697	352	345	107	49	20	7	7	12	4	7	15	7	15	25	22	35	33
Digestive.																		
Diseases of the Mouth and Annexa	7	4	3	6	...	...	...	...	...	...	...	...	...	...	1	...	...	....
Diseases of the Pharynx, Tonsillitis, ...	3	3	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	....
Diseases of the Oesophagus ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Perforating Ulcer of the Stomach	11	3	8	...	...	...	...	...	...	...	1	1	...	...	2	3	...	
Inflammation of the Stomach, Gastritis, Gastric Catarrh ...	14	6	8	4	...	1	...	...	...	...	...	...	...	...	...	...	1	
Other Diseases of the Stomach ...	5	2	3	...	1	...	...	...	1	1	...	...	...	...	...	...	...	
Epidemic Diarrhœa, Infective Enteritis	105	58	47	63	22	3		...	1	...	...	1	1	1	1	1	2	
Diarrhœa (not infective), Gastro-Intestinal Catarrh ...	44	21	23	20	12	...	...	...	...	...	...	...	...	...	...	...	1	
Enteritis (not infective) Muco-Enteritis	32	20	12	20	2	2	2	...	...	...	...	...	...	1	1	...	2	1
Gastro-Enteritis (not infective) ...	35	17	18	23	6	1	...	...	...	...	1	...	...	...	...	...	1	...
Dyspepsia (under 2 years) ...	3	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Colic	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulceration of Intestines ..	3	1	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Duodenal Ulcer	4	3	1	...	...	..	...	...	...	...	...	1	...	1	...	1	1	...
Appendicitis, Perityphlitis ...	18	10	8	...	...	...	...	1	1	5	...	...	...	3	2	3	...	1
Hernia	8	4	4	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
Intestinal Obstruction ...	15	7	8	3	1	...	...	...	...	...	1	...	1	...	...	...	1	2
Other Diseases of Intestines ...	3	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Cirrhosis of the Liver (not alcoholic)	16	12	4	...	...	...	...	...	...	...	...	...	...	...	2	1	6	2
Cirrhosis of the Liver (alcoholic)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Biliary Calculi	7	3	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2
Other Diseases of the Liver ...	7	4	3	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Diseases of the Spleen ..	1	...	1	...	...	...	...	...	..	...	...	...	...	...	1	...	...	...
Peritonitis (not puerperal) ...	4	1	3	1	...	...	...	...	...	1	1	...	...	...	...	...	...	1
Other Diseases of the Digestive System	1	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Total Diseases of the Digestive System	348	185	163	144	44	8	3	1	4	8	4	4	3	7	11	10	17	18
Genito-Urinary System and Annexa (non-veneral)																		
Acute Nephritis	18	6	12	1	2	...	1	...	...	...	3	...	...	3	1	4	...	...
Chronic Bright's Disease, ...	97	58	39	...	1	...	...	...	...	3	2	2	1	4	2	4	4	16
Nephritis (unqualified) 10 years and over, Uræmia ...	9	4	5	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3
Other Diseases of the Kidney and Annexa	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calculi of the Urinary Passages...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carried forward ...	124	68	56	1	3	...	1	...	...	3	5	2	1	7	3	8	5	19

55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	WARD. North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
...	...	...	1	...	...	...	5	4	1	1	...	...	1	...	...	1	...	...	1	2	...	...	1	1	...
...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
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40	52	55	58	37	21	6	54	330	12	22	60	13	57	19	19	59	13	4	9	44	3	5	16	22	7
1	1	3	1	2	2	...	78	20	4	5	12	5	7	4	3	22	4	...	8	14	1	3	2	2	2
2	3	1	1	1	...	...	5	44	3	2	7	1	4	1	5	9	1	1	1	5	...	2	4	2	1
6	4	8	6	...	...	...	44	74	5	13	21	2	16	5	8	14	5	1	3	9	2	3	3	5	3
1	5	2	1	...	...	...	2	15	...	1	2	1	...	1	1	5	...	...	1	3	...	1	...	1	...
...	...	1	...	1	1	...	1	6	...	...	1	...	...	...	1	2	...	1	...	1	...	...	...	...	1
3	...	1	...	...	...	...	...	7	...	...	...	1	...	...	3	...	...	...	...	3	...	...	...	...	...
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54	67	71	69	41	24	6	190	507	25	45	103	23	88	30	40	113	23	7	23	83	6	14	26	34	14
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4	...	1	2	1	...	..	88	17	1	5	6	1	24	4	7	23	6	1	20	2	...	1	2	2	...
...	1	1	4	...	2	...	32	12	...	3	5	3	4	1	3	3	3	...	9	4	2	1	1	2	...
1	...	...	...	...	...	...	26	6	3	1	3	3	8	...	3	...	1	2	1	3	...	...	2	2	...
...	...	...	1	2	...	...	30	5	4	3	7	...	...	...	...	4	...	1	2	9	1	1	...	3	...
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1	2	...	1	1	1	...	...	8	...	...	...	...	2	...	...	3	1	...	...	...	...	1	...	1	...
1	...	3	...	2	...	...	4	11	...	1	3	...	1	1	1	2	1	1	...	2	...	...	1	...	1
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1	...	2	1	1	...	...	...	16	...	1	...	2	3	1	...	1	1	1	1	2	1	...	1	...	1
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1	2	1	...	1	...	...	...	7	...	1	1	...	2	...	1	1	...	...	...	1	...	...	...	...	...
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13	7	14	10	14	3	1	200	148	12	20	39	10	53	9	19	47	15	7	41	29	4	8	9	19	7
2	1	...	...	...	...	...	4	14	2	1	4	1	1	...	1	2	...	...	2	2	...	...	1	...	1
15	18	10	11	4	...	...	1	96	3	6	17	3	8	6	6	9	6	2	3	9	1	3	4	9	2
...	1	1	3	...	...	...	...	9	2	2	...	...	1	1	...	...	...	...	...	1	...	...	...	1	1
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17	20	11	14	4	...	...	5	119	7	9	21	4	10	7	7	11	6	2	5	12	1	3	5	10	4

TABL

CAUSES O

CAUSES OF DEATH.	Total.	SEX.		AGE.													
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50
Brought forward...	124	68	56	1	3	...	1	...	...	3	5	2	1	7	3	8	5
Genito-Urinary System & Annexa (non veneral) *Cont.*																	
Diseases of the Bladder	3	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Diseases of the Urethra, Urinary Abscess...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Diseases of the Prostate	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Non-venereal Diseases of Male Genital Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine Hæmorrhage (non-puerperal)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Uterine Tumour (non-cancerous)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Uterus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ovarian Cyst, Tumour (non-cancerous)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Female Genital Organs ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Other Diseases of Genito-Urinary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Genito-Urinary System	133	76	57	1	3	...	1	...	...	3	5	2	1	7	4	11	5
The Puerperal State.																	
Abortion, Miscarriage	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Other Accidents of Pregnancy...	3	...	3	...	...	...	...	...	...	...	...	1	...	...	1	1	...
Puerperal Hæmorrhage, Flooding	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Other Accidents of Childbirth	6	...	6	...	...	...	...	...	...	...	...	...	...	...	5	1	...
Puerperal Fever	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Albuminuria and Convulsions	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Puerperal Insanity	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Phlegmasia Alba Dolens	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Diseases of the Breast	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Puerperal...	12	...	12	...	...	...	...	...	...	...	...	1	...	...	7	3	1
Skin & Cellular Tissue.																	
Senile Gangrene	6	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Gangrene	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carbuncle, Boil	2	1	1	...	1	...	...	...	...	...	...	...	...	1	..	...	...
Phlegmon, Acute Abscess	3	1	2	1	...	...	...	...	...	...	...	...	...	...	...	1	1
Ulcer, Bedsore	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Eczema	2	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Pemphigus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Skin and Cellular Tissue	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of the Skin, &c.	15	6	9	3	1	...	...	...	...	...	...	...	...	1	...	2	1
Diseases of the Bones and Locomotor System.																	
Diseases of the Bones	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Joints	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Locomotor System	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Locomotor System, &c.	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malformations.																	
Congenital Hydrocephalus	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Phimosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Congenital Malformation of the Heart	7	5	2	6	...	...	...	...	1	...	...	...	...	...	...	...	...
Other Congenital Malformations	4	3	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Congenital Malformations	12	9	3	11	...	...	...	...	1	...	...	...	...	...	...	...	...

I.—Continued.

DEATH, 1913.

									WARD.																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rum'worth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
17	20	11	14	4	...	...	5	119	7	9	21	4	10	7	7	11	6	2	5	12	1	3	5	10	4
...	1	...	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1
1	...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	1
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18	22	11	15	4	...	...	5	128	7	9	23	4	10	7	7	13	6	2	5	14	1	3	5	11	6
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
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...	...	...	...	...	...	...	11	1	1	1	1	...	...	1	...	3	...	...	1	1	...	2	...	1	...

TABLE

CAUSES OF

CAUSES OF DEATH.	Total.	SEX.		AGE.														
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	5 to 5
Diseases of Early Infancy.																		
Premature Birth	75	37	38	75	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Atrophy, Debility, Marasmus (infantile)	71	45	26	71	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Icterus Neonatorum	3	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sclerema	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Want of Breast Milk ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of Umbilicus ...	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Atelectasis	5	3	2	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Injuries at Birth	4	3	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cyanosis Neonatorum ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lack of Care	...	...	...	...	...	...	...	. .	...	...	...	...	...	...	...	...	...	..
Total Diseases of Early Infancy	159	92	67	159	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Old Age.																		
Senile Decay, Old Age ...	144	65	79	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Senile Dementia	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Total Diseases of Old Age ..	147	66	81	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Violent Causes.																		
1.—Accident.																		
Poisoning by Food	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	....
Other Acute Poisonings ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Poisoning by Deleterious Gases, Suffocation	3	2	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Conflagration	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns (conflagrations excepted) Scalds	12	5	7	...	2	1	...	...	4	1	1	...	1	...	...	...	...	...
Drowning	15	12	3	1	...	...	...	...	5	...	1	1	2	...	...	1	...	1
Firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	....
Cutting or Piercing Implements...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Falls	18	11	7	1	...	...	1	...	2	...	...	...	...	2	1	...	...	1
In Mines and Quarries ...	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	1
Machinery	2	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	....
Vehicles	11	9	2	...	...	1	...	...	1	...	2	2	1	...	...	...	...	1
Animals	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Weather Agencies	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Otherwise or not Stated ...	5	4	1	...	...	...	2	...	...	1	...	...	...	...	...	1	...	...
2.—Suicide.																		
Poison	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Asphyxia	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Hanging or Strangulation ...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Drowning	7	2	5	...	...	...	...	...	...	...	...	1	1	...	1	1	1	...
Firearms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cutting or Piercing Instruments	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Other Suicides	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
3.—Homicide.	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
4.—Execution.	...	...	...	...	...	.	...	...	...	...	...	...	...	...	...	...	...	...
Total Violent Deaths ...	84	55	29	4	2	2	3	...	12	2	5	6	6	2	3	7	1	5
Ill-defined Causes.																		
Atrophy, Debility, Marasmus (age 1 and under 70) ...	5	2	3	...	4	...	...	...	...	...	...	...	...	...	...	1	...	...
Heart Failure (age 1 and under 70) ...	7	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Syncope (age 1 and under 70) ...	3	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Teething, Dentition, (without Convulsions) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dropsy, Ascites, Anasarca ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
Other Ill-defined Causes ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Ill-defined Deaths ...	15	6	9	...	4	...	...	...	...	...	...	...	...	...	...	1	1	1

									WARD.																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
...	...	...	...	...	...	...	75	...	3	6	10	1	7	1	6	6	5	1	4	8	...	2	4	7	4
...	...	...	...	...	...	...	71	...	1	3	9	4	14	2	1	12	2	1	4	4	...	4	2	8	...
...	...	...	...	...	...	...	3	...	...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	1	1	...	...	...	2	...	...	...	...	1
...	...	...	...	...	...	...	4	...	...	1	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	159	...	4	12	19	5	22	3	9	20	7	2	10	14	...	6	6	15	5
1	...	10	43	33	37	20	...	144	4	10	17	4	14	7	5	13	3	4	3	16	2	8	13	16	5
...	...	2	1	...	...	...	...	3	...	...	...	1	...	...	...	...	...	1	...	...	...	...	1	...	...
1	...	12	44	33	37	20	...	147	4	10	17	5	14	7	5	13	3	5	3	16	2	8	14	16	5
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	2	1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	1	...	...	...	...	3	9	...	...	...	1	2	...	2	4	...	...	1	2	...	...	...	...	...
...	1	1	...	...	1	...	1	14	...	1	1	...	1	...	2	1	...	1	...	2	...	...	...	2	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	1	1	1	2	1	1	2	16	1	3	2	...	3	1	...	3	1	...	...	...	...	...	1	2	1
...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	...
...	1	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
1	1	...	1	...	...	...	1	10	1	1	4	1	...	...	1	1	...	1	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	2	3	...	...	...	...	3	...	...	1	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
...	1	...	1	...	...	...	...	7	...	...	...	...	1	1	3	...	...	...	...	...	...	...	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	..	...
...	...	...	...	...	...	...	...	...	...	...	...	...	.	...	..	...	...	...	...	...	...	...	...	...	...
7	6	3	3	2	2	1	11	73	3	7	8	3	10	3	8	12	1	2	3	10	...	1	1	5	7
..	...	...	.	...	...	...	4	1	...	...	...	2	1	...	...	2	...	...	...	...	...	...	...	..	...
2	...	3	...	...	...	...	...	7	...	...	...	...	3	...	1	1	...	...		1	1	...	...	...	...
...	2	1	...	...	...	...	...	3	...	...	...	...	...	...	1	1	...	...	...	...	...	...	1	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	.	...	...	...	.	..	...	...	..
..	...	...	...	...	...	...	...	...	...	...	...	...	...	.	.	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		...	.	...	...	..	...	...	...
2	2	4	...	...	...	...	4	11	...	...	...	2	4	...	2	4	...	..	...	1	1	...	1	...	...

TABLE

SUMMARY OF CAUSES OF

Causes of Death.	Total.	Sex. M.	Sex. F.	Age. 0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50
General Diseases ...	713	345	368	66	78	32	10	23	30	16	20	26	23	39	36	41	47
Nervous System, &c. ...	327	157	170	71	32	9	3	2	3	4	7	5	4	6	10	13	9
Circulatory System ...	232	102	130	3	...	1	...	1	2	5	7	3	8	4	11	9	20
Respiratory System ...	697	352	345	107	49	20	7	7	12	4	7	15	7	15	25	22	35
Digestive System ...	348	185	163	144	44	8	3	1	4	8	4	4	3	7	11	10	17
Genito-Urinary System &c.	133	76	57	1	3	...	1	...	...	3	5	2	1	7	4	11	5
The Puerperal State ...	12	...	12	...	...	...	...	...	...	...	...	1	...	...	7	3	1
Skin and Cellular Tissue	15	6	9	3	1	...	...	...	...	...	...	...	...	1	...	2	1
Locomotor System, &c.	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malformations ...	12	9	3	11	...	...	...	...	1	...	...	...	...	...	...	...	...
Diseases of Early Infancy	159	92	67	159	...	...	...	...	...	...	...	...	...	...	...	...	...
Old Age	147	66	81	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Violent Causes ...	84	55	29	4	2	2	3	...	12	2	5	6	6	2	3	7	1
Ill Defined Causes ...	15	6	9	...	4	...	...	...	...	...	...	...	...	...	...	1	1
Grand Total	2895	1452	1443	569	213	72	27	34	64	42	55	62	52	81	107	119	137

I.

DEATH, 1913.

									WARD.																
55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rum'worth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar Lever c-Br'htmet
47	46	39	27	12	2	2	209	504	19	43	110	19	105	24	51	89	23	14	50	73	11	14	23	38	7
19	35	33	25	9	6	...	117	210	15	26	41	9	50	17	21	32	6	7	10	44	3	8	15	21	2
27	34	37	19	17	2	3	5	227	10	9	32	7	22	15	8	25	7	8	8	36	2	15	10	10	8
54	67	71	69	41	24	6	190	507	25	45	103	23	88	30	40	113	23	7	23	83	6	14	26	34	14
13	7	14	10	14	3	1	200	148	12	20	39	10	53	9	19	47	15	7	41	29	4	8	9	19	7
18	22	11	15	4	...	...	5	128	7	9	23	4	10	7	7	13	6	2	5	14	1	3	5	11	6
...	...	...	...	...	...	...	...	12	...	...	...	...	2	...	1	1	2	...	3	...	1	1	...	...	1
1	...	2	3	...	1	...	4	11	1	...	1	...	2	2	...	3	1	1	...	3	...	1	...	...	...
1	...	..	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	11	1	1	1	1	...	...	1	...	3	...	...	1	1	...	2	...	1	...
...	...	...	...	...	...	...	159	...	4	12	19	5	22	3	9	20	7	2	10	14	...	6	6	15	5
1	...	12	44	33	37	20	...	147	4	10	17	5	14	7	5	13	3	5	3	16	2	8	14	16	5
7	6	3	3	2	2	1	11	73	3	7	8	3	10	3	8	12	1	2	3	10	...	1	1	5	7
2	2	4	...	...	...	...	4	11	...	...	...	2	4	...	2	4	...	..	...	1	1	...	1	...	...
90	219	226	215	132	77	33	915	1980	101	182	394	87	382	118	171	375	94	55	157	325	31	81	110	170	62

TABLE II.

33 Great Towns.—Death-rates per 1000 living from All Causes and from the Principal Epidemic Diseases, and Infant Mortality in the Five Years 1907-1911, and in 1912.

TOWNS.	All Causes		Small-Pox.		Measles.		Scarlet Fever.		Diphtheria.		Whooping-cough.		Enteric Fever.		Diarrhœa and Enteritis (under 2 years.)		Deaths Under One Year to 1000 Births.	
	Five years 1907-1911.	1912.	Five years 1907-1911.	1913.	Five years 1907-1911.	1912.	Five years 1907-1911.	1912.	Five years 1907-1911.	1912.	Five years 1907-1911.	1912.	Five years 1907-1911.	1912.	Five years 1907-1911.	1912.	Five years 1907-1911	1912.
95 Towns.	**15·2**	**13·8**	**0·00**	**0·00**	**0·40**	**0·47**	**0·10**	**0·06**	**0·16**	**0·13**	**0·29**	**0·26**	**0·07**	**0·04**	Figures not available.	**10·91**	**125**	**101**
London...	14·7	13·6	0·00	0·00	0.45	0·40	0·09	0·04	0·14	0 10	0·28	0·22	0·04	0·03		12·42	114	91
Birmingham ...	16·5	14·1	0·00	—	0·47	0·67	0·16	0·18	0·16	0·12	0·36	0·39	0·07	0·04		10·36	144	112
Liverpool	19·4	18·1	—	—	0·48	1·15	0·23	0·11	0·16	0·14	0·43	0·36	0·08	0.03		20·42	145	125
Manchester ...	17·6	16·0	—	0·00	0·49	0·68	0·14	0·07	0·16	0·13	0·36	0·41	0·09	0·06		14·18	143	121
Sheffield	16·1	14·2	0·00	—	0·81	0·39	0·11	0·07	0·10	0.10	0·32	0·41	0·07	0·09		10·72	134	106
Leeds	16·0	14·2	—	—	0·27	0·36	0·07	0·09	0·18	0·21	0·31	0·12	0·06	0·04		9·84	136	101
Bristol	13·9	13·3	0·01	0·01	0·23	0·44	0·04	0·03	0·15	0·13	0·24	0·19	0·03	0·01		7·30	111	103
West Ham ...	15·3	14·1	—	—	0·65	0·85	0·13	0·06	0·19	0·12	0·41	0·43	0·07	0·05		11·79	125	104
Bradford	15·0	14·4	—	—	0·21	0·17	0·05	0·04	0.15	0·20	0·22	0·05	0·10	0·17		4·47	130	99
Hull	16·0	14·4	0·00	—	0·39	0·53	0·04	0·00	0·18	0·07	0·27	0·09	0·10	0·12		10·60	135	101
Newc'le-on-Tyne	16·1	14·2	0·00	—	0·36	0·61	0·07	0·13	0·17	0·11	0·41	0·15	0·04	0·06		6·65	127	101
Nottingham ...	16 2	14·4	0·00	—	0·41	0·62	0·04	0·09	0·12	0·10	0·28	0·27	0·10	0·05		12·25	150	117
Portsmouth ...	14·0	12·9	—	—	0·34	0·40	0·07	0·12	0·27	0·53	0·21	0·22	0·14	0·09		9·99	110	82
Stoke-on-Trent	18·7	15·8	—	—	0·56	0·23	0·18	0·12	0·31	0·25	0·34	0·30	0·14	0·11		17·02	170	128
Salford	17·8	16·5	—	—	0·56	1·06	0·23	0·04	0·35	0·14	0·38	0·55	0·13	0·08		14·84	142	128
Leicester	13·4	13·4	—	—	0·38	0·42	0·10	0·05	0·06	0·09	0·17	0·21	0·03	0 03		8·89	129	110
Cardiff	14·3	13·7	0·01	—	0·29	1·10	0.08	0·04	0·13	0·17	0·25	0·31	0·04	0·08		10·85	121	110
BOLTON	**15·9**	**13·4**	—	—	**0·39**	**0·19**	**0·15**	**0·05**	**0·14**	**0·12**	**0·27**	**0·21**	**0·15**	**0·05**		**8·57**	**140**	**98**
Croydon	11·8	10·6	—	—	0·23	0·18	0·05	0·01	0·19	0·14	0·19	0·06	0.02	0·04		12·26	93	76
Willesden	11·4	10·1	—	—	0·30	0·21	0·08	0·01	0·09	0·06	0·33	0·17	0 03	0·02		4·60	103	84
Rhondda	15·5	13·5	—	—	0·53	0·81	0·10	0·11	0·16	0·11	0·23	0·51	0·11	0·10		11·55	155	128
Sunderland ...	18·3	15·9	—	—	0·53	0·44	0·09	0·01	0·19	0·14	0·45	0·28	0·08	0·03		6·31	138	115
Oldham	18·4	16·1	—	—	0·43	0·44	0·10	0·05	0·10	0·08	0·31	0·43	0 06	—		12·58	142	117
Tottenham	12·3	11·1	—	—	0·33	0·16	0·06	0·01	0·13	0·11	0·24	0·30	0·03	0·04		8·14	100	82
East Ham	11·8	10·4	—	—	0·41	0·30	0·11	0·04	0·25	0·07	0·23	0·28	0·04	0·02		5·83	107	74
Walthamstow ...	11·7	9·8	—	—	0·26	0·17	0·09	0·02	0·20	0·17	0·30	0·27	0·05	0·02		7·41	103	79
Birkenhead ...	15·2	14·3	0·00	—	0·43	0·40	0·07	0·08	0·16	0·15	0·30	0·36	0·07	0·04		17·29	128	97
Blackburn	16·2	14·2	0·00	—	0·27	0·41	0·20	0·02	0·15	0·07	0·25	0·20	0·10	0·05		12·89	150	118
Brighton	14·6	12·7	—	—	0·19	0·18	0·04	0·04	0·09	0·02	0·17	0·02	0·04	0·05		6·82	104	76
Leyton...	11·3	10·6	—	—	0·30	0·09	0·13	0·04	0·22	0·17	0·24	0·31	0·03	0·03		7·49	85	76
Middlesbrough...	19·5	17·2	—	—	0·70	1·70	0·05	0·19	0·30	0·08	0·47	0·07	0·13	0·08		9·81	157	125
Derby	13·8	12·1	—	—	0·35	0·06	0·03	0·02	0·27	0·10	0·19	0·14	0·07	0·02		7·19	113	79
Stockport	16·5	14·6	—	—	0·37	0·47	0·08	0·05	0·14	0·13	0·28	0·33	0·06	0·05		8·39	153	107

In this table 0·00 indicates that the deaths were too few to give a death-rate of 0·005; where *no deaths* occurred —is inserted.

TABLE III.

POPULATIONS, BIRTHS AND DEATHS 1908-13.

Year	Population estimated to Middle of each Year	Births			Total Deaths registered in the District.		Transferable Deaths.		Nett Deaths belonging to the District			
		Uncorrected Number.	Nett.				of Non-residents Registered in the District	of Residents not Registered in the District	Under 1 year of Age.		At all Ages	
			Number	Rate	Number	Rate			Number	Rate per 1000 nett Births	Number	Rate
1908	177400	4573	Corrected	25·7	2599	14·6	38	313	667	145	2874	16·2
1909	178667	4750		26.5	2590	14·4	28	330	590	124	2892	16·1
1910	179934	4380		24·3	2308	12·8	36	296	499	113	2568	14·2
1911	181202	4125	38	22·9	2607	14·3	43	398	670	161	2962	16·3
1912	182534	4083	45	22·6	2181	11·9	39	363	398	96	2505	13·7
1913	183879	3966	23	21·7	2564	13·9	39	370	569	142	2895	15·7

CENSUS, 1911.

Total Population at all ages	180851
Number of inhabited Houses	40681
Average Number of Persons per House	4·4
Area of District in Acres (land and inland water)... ...	15283

TABLE IV.

Causes of, and Ages at—Death, 1913.

Causes of Death	Nett Deaths at the subjoined Ages of "Residents" whether occurring within or without the District.									Total Deaths whether of "Residents" or "Non-Residents" in Institutions in the District
	All Ages	Under 1 year	1 and under 2	2 and under 5	5 and under 15	15 and under 25	25 and under 45	45 and under 65	65 and upwards	
All causes { Certified...	2889	566	213	133	106	117	359	712	683	147
All causes { Uncertified	7	4	...	...	...	...	...	3	...	...
Enteric Fever	16	...	1	1	3	3	6	2	...	5
Smallpox	...	...	...	...	...	...	...	...	...	...
Measles	85	15	44	23	3	...	...	...	...	3
Scarlet Fever	3	...	1	1	1	...	...	...	...	1
Whooping Cough	49	21	12	14	2	...	...	...	...	...
Diphtheria and Croup	32	3	3	12	14	...	...	...	...	4
Influenza	25	3	1	2	1	...	4	8	6	...
Erysipelas	3	...	...	...	...	...	...	1	2	...
Phthisis (Pulmonary Tuberculosis) ...	154	...	1	1	10	23	79	36	4	4
Tuberculous Meningitis	22	5	6	6	4	...	1	...	...	...
Other Tuberculous Diseases	36	11	5	3	2	8	5	1	1	5
Cancer, Malignant Disease	182	...	...	1	1	2	24	107	47	23
Rheumatic Fever	14	...	...	...	3	3	5	3	...	...
Meningitis	41	14	4	9	6	1	2	3	2	...
Organic Heart Disease	170	2	...	...	5	8	26	76	53	2
Bronchitis	384	41	10	3	...	2	22	129	177	...
Pneumonia (all forms)	265	63	37	27	12	19	41	41	25	5
Other Diseases of Respiratory Organs	48	3	2	4	4	1	6	19	9	1
Diarrhœa and Enteritis	226	129	42	8	1	3	9	20	14	3
Appendicitis and Typhlitis	18	...	...	1	6	...	8	2	1	14
Cirrhosis of Liver	16	...	...	...	...	...	3	9	4	...
Alcoholism	5	...	...	...	...	...	3	2	...	1
Nephritis and Brights Disease ...	124	1	3	1	3	7	19	61	29	2
Puerperal Fever	...	...	...	...	...	...	...	...	...	...
Other accidents and diseases of Pregnancy and Parturition	12	...	...	...	...	1	10	1	...	1
Congenital Debility and Malformation including Premature Birth...	161	160	...	...	1	...	...	...	...	1
Violent Deaths, excluding Suicide ...	71	4	2	5	14	9	12	15	10	31
Suicides	13	...	...	...	...	2	6	4	1	1
Other defined Diseases	705	94	35	11	10	25	67	169	294	40
Diseases ill-defined or unknown ...	15	...	4	...	...	...	1	6	4	...
All causes	2895	569	213	133	106	117	359	715	683	147
Sub-entries included in above figures. { Cerebro-Spinal Meningitis	...	...	...	...	...	...	...	...	...	...
Sub-entries included in above figures. { Poliomyelitis	2	...	...	1	...	...	...	1	...	...
Sub-entries included in above figures. { Lobar Pneumonia ...	49	3	1	1	4	7	17	13	3	2
Sub-entries included in above figures. { Pneumonia	118	19	11	14	4	12	22	22	14	1

TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1913.

NETT DEATHS FROM STATED CAUSES AT VARIOUS AGES UNDER ONE YEAR OF AGE.

Cause of Death		Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 4 Weeks	4 Weeks and under 3 Months	3-6 Months	6-9 Months	9-12 months	Total Deaths under 1 Year
All Causes	Certified ...	84	31	28	20	163	106	111	98	87	565
	Uncertified...	4	...	...	...	4	...	...	...	...	4
Small Pox ...		...	...	...	...	...	...	...	...	...	...
Chicken Pox ...		...	...	...	...	...	...	...	...	...	...
Measles ...		...	...	2	...	2	...	...	7	6	15
Scarlet Fever ...		...	...	...	...	...	...	...	...	...	...
Whooping Cough ...		...	...	...	1	1	2	2	9	7	21
Diphtheria and Croup...		...	...	...	...	...	...	1	...	2	3
Erysipelas ...		...	...	...	...	...	...	...	...	...	...
Tuberculous Meningitis ...		...	...	...	...	...	...	1	3	1	5
Abdominal Tuberculosis ...		...	...	...	...	...	1	4	1	4	10
Other Tuberculous Diseases ...		...	...	...	...	...	...	...	...	1	1
Meningitis (*not Tuberculous*) ...		...	...	1	2	3	1	5	1	4	14
Convulsions ...		8	5	4	2	19	9	8	13	7	56
Laryngitis ...		...	...	...	...	...	...	1	...	...	1
Bronchitis ...		...	2	...	1	3	13	13	6	6	41
Pneumonia (all forms)...		...	...	2	...	2	5	14	20	22	63
Diarrhœa ...		...	1	3	2	6	21	26	15	18	86
Enteritis...		...	4	1	1	6	12	8	12	5	43
Gastritis...		...	...	1	...	1	...	2	1	...	4
Syphilis ...		..	1	...	...	1	1	3	...	...	5
Rickets ...		...	...	...	...	...	1	...	1	...	2
Suffocation, overlying...		1	...	...	...	1	1	...	...	...	2
Injury at Birth ...		4	...	...	...	4	...	...	...	...	4
Atelectasis ...		3	2	...	...	5	...	...	...	...	5
Congenital Malformations ...		2	...	1	2	5	3	1	2	...	11
Premature Birth ...		50	7	7	1	65	9	1	...	...	75
Atrophy, Debility and Marasmus ...		20	7	4	6	37	17	17	1	2	74
Other Causes ...		...	2	2	2	6	10	4	6	2	28
Totals ...		88	31	28	20	167	106	111	98	87	569

Nett Births in the year—Legitimate, 3842; Illegitimate, 157. Nett Deaths in the year of legitimate and illegitimate infants not available.

TABLE VI.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1913.

Notifiable Disease	Number of Cases Notified.								Total Cases Notified in each Ward.																	Total cases removed to Hospital
	At all Ages	At Ages—Years																								
		Under 1	1 to 5	5 to 15	15 to 25	25 to 45	45 to 65	65 and upwards	West	Halliwell	Bradford	Derby	East	Rumworth	Church	North	Exchange	Great Lever	Tonge	Astley Bridge	Smithills	Hulton	Deane-c-Lostock	Darcy L.-c-Br'm'	Heaton	
Small Pox ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup) ...	118	...	60	42	9	6	1	...	12	6	12	12	1	20	2	4	...	7	8	4	6	11	2	2	9	8
Erysipelas ...	70	...	3	3	11	20	24	9	5	8	9	11	8	3	1	2	1	8	3	5	1	1	1	3	...	...
Scarlet Fever ...	208	...	105	90	11	2	...	...	16	36	15	7	8	9	5	11	2	25	17	24	7	14	...	8	4	94
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	53	...	8	10	13	18	4	...	7	6	4	3	3	5	4	...	...	6	...	3	1	2	6	3	...	26
Continued Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	4	...	...	...	...	4	...	...	...	...	2	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
Cerebro-spinal Meningitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis ...	349	...	4	65	64	147	63	6	48	45	41	40	23	17	18	16	29	17	7	10	17	14	4	1	2	221
Other forms of Tuberculosis ...	158	13	24	49	40	24	6	2	30	19	14	17	13	8	8	6	10	6	6	6	4	5	2	3	1	...
Ophthalmia Neonatorum ...	26	26	...	...	...	...	...	...	7	1	3	7	1	...	...	1	...	2	1	1	1	1	...	...	...	...
Total ...	986	39	204	259	148	221	98	17	125	121	100	97	57	62	39	40	42	72	42	53	37	48	15	20	16	349